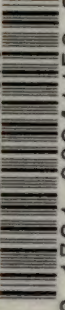



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DANMARK-EKSPEDITIONEN TIL GRØNLANDS
NORDØSTKYST 1906—1908 · BIND IV · NR. 5

SÆRTRYK AF »MEDDELELSER OM GRØNLAND» XLIV

IMPLEMENTS AND ARTEFACTS
OF
THE NORTH-EAST GREENLANDERS

FINDS FROM
GRAVES AND SETTLEMENTS

(COLLECTION OF THE DANMARK EXPEDITION)

BY

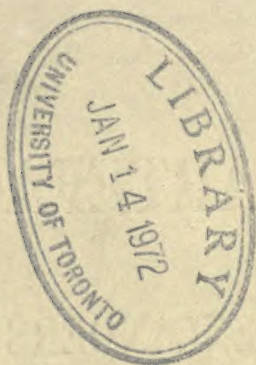
THOMAS THOMSEN

WITH PLATES VII—XXVI



KØBENHAVN
BIANCO LUNOS BOGTRYKKERI

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Introduction.

AMONG the wealth of scientific material brought home by the Danmark Expedition from North-east Greenland, the ethnographical collection is not the least important part.

It was the Leader of the Expedition, L. MYLIUS-ERICHSEN, who devoted to this sphere of work his keen interest and energy. He himself was not fated to see the results of his endeavours; in the spring of 1907, he recorded with enthusiasm his discovery of the first traces of Eskimos north of the inhospitable Jøkelbugt, which he had for some time regarded as the northernmost limit of human occupation on this coast¹; six months later, he perished during a winter journey over the inland ice. After his death, the archaeological-ethnographical work was carried on by CHR. BENDIX-THOSTRUP, whose personal activity in this field includes numerous investigations, and the careful labelling of the large mass of material. Each member of the expedition, however, made collections and excavations at the places visited, and it is only by such united effort that so extensive finds could have been made².

After the return of the Expedition, the work remaining to be done was divided, Hr. BENDIX-THOSTRUP, who had personally supervised the greater part of the operations, undertaking to compile the descriptions of settlements and ruins³, while the task of dealing with the actual objects found was allotted to the present writer, as one connected with the Museum side. I take this opportunity of proffering my respectful thanks to the Committee of the Danmark Expedition for having entrusted the work to my care.

Such a division rendered it natural to arrange the material according to the nature of the objects concerned, rather than by locality; in so doing, a clearer view of the culture of North-east Greenland would be obtained, while at the same time, the repetition inseparable from a record based on locality could be avoided. Such local dissimilarities as exist are, moreover, but slight, and may better be referred to while dealing with the separate implements, or subsequently noted.

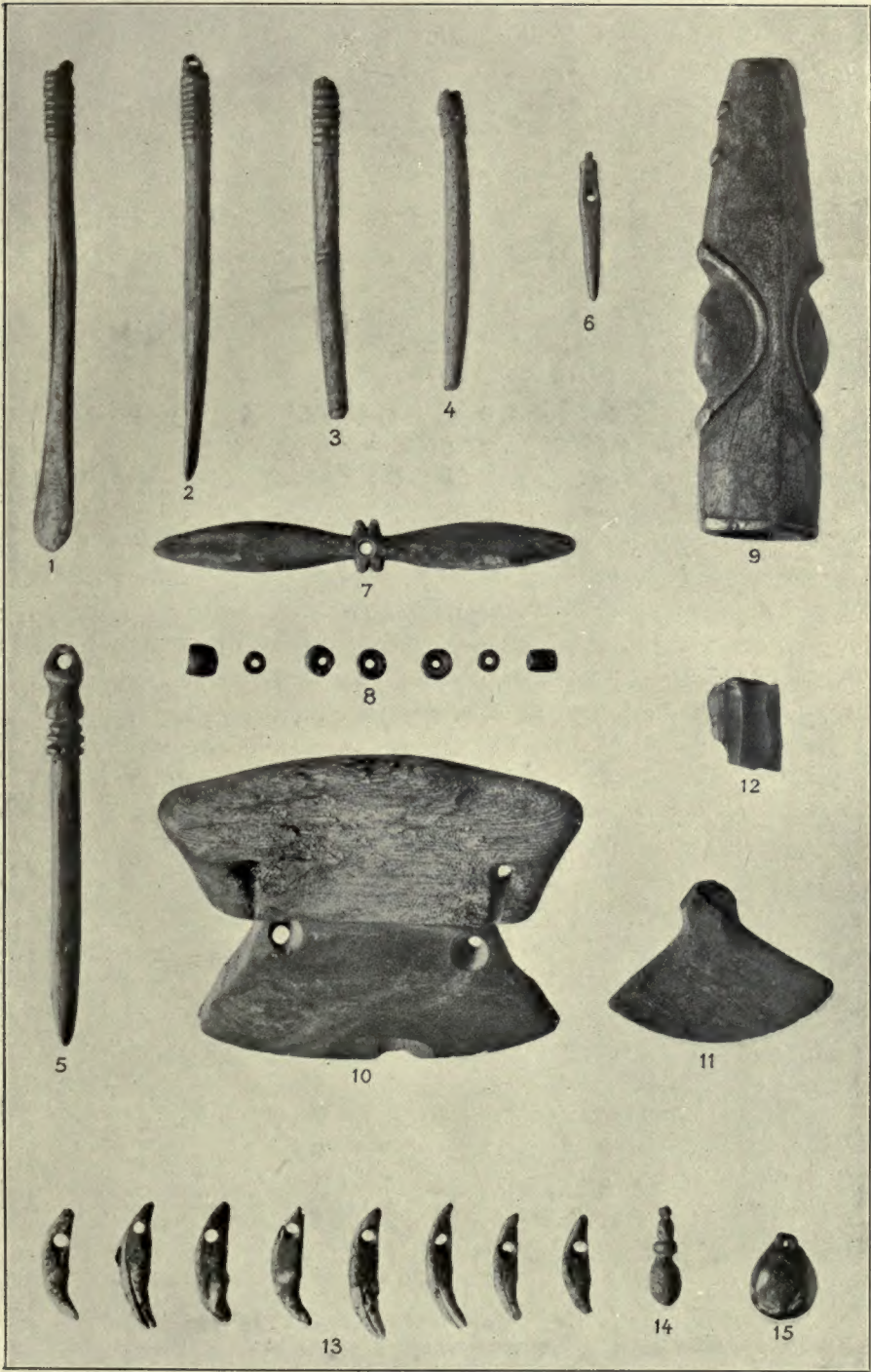
¹ cf. THOSTRUP p. 209. ² loc. cit. p. 183. ³ CHR. BENDIX-THOSTRUP: Ethnographical description of the Eskimo settlements and Stone Remains. Kbh. 1911 (Medd. om Grønl. XLIV).

In the case of certain finds, however, it was imperative to depart from this general arrangement; thus with burial places, for instance, where the collection of objects found in the grave represented the personal belongings of a single individual, it would have been unnatural to divide up the find into its separate parts. The grave and the objects found therein should be regarded as a single indivisible item, and grave finds demand a special chapter to themselves. Similarly also, I have found it advisable to devote another chapter to the special consideration of two larger finds, the remains of settlements, each of which may in some degree claim to be regarded apart from the rest. Here, however, the more detailed description of the separate items has for the most part been relegated to that part of the work dealing with implements generally.

In treating of single implements or groups of such, reference has, in the fullest possible degree, been made to the material previously brought home from North-east Greenland; in this connection, North-east Greenland is taken as indicating the now uninhabited northern portion of the East coast, with the Scoresby Sound district as its southernmost part.

The previous material here in question comprises — in order of locality from north to south — the collection in the Museum für Völkerkunde in Berlin, from the second German Arctic Expedition in 1869—70, which verges on the southern portion of the area investigated by the Danmark Expedition; the collection from the NATHORST Expedition (1899) in the Riksmuseum, Stockholm, from the region between 75° and 70° ; a small section in the ethnographical collection of Christiania University, brought home by a Norwegian whaler, especially from Lat. $74^{\circ} 20'$ and finally, the extensive collections in the National Museum, Copenhagen, as procured by two Danish Expeditions, to wit, C. RYDER's in 1892 to Scoresby Sound, and G. AMDRUP's of 1898—1900 to the regions between Scoresby Sound and Angmagsalik.

In the case of the NATHORST collection, I have only been able to consider such items as are illustrated in the various published works; the remaining collections, however, I have been able to study in the respective museums, and beg to express my grateful thanks to the authorities concerned for the courtesy and assistance afforded me in the work. My special thanks are also due to Hr. HERLUF WINGE, Viceinspector at the Zoological Museum of Copenhagen University, who kindly undertook the determination of a large number of bone objects among the material.



Grave Finds.

ALTHOUGH a considerable amount of material was brought home by the Danmark Expedition illustrative of the life and doings of the aborigines in the now deserted districts of North-east Greenland, it gives but scanty information regarding their relation to the dead. Altogether only twelve graves were found, distributed among seven localities. They were built, as usual, above ground and of stone; as elsewhere in Greenland they were not uniformly orientated; this depended on local conditions. In one case (grave 321) the skeleton appeared to have been lying in an extended position; otherwise, wherever it was possible to make observations, the body was placed in the position most common in Eskimo graves, namely with the knees tightly drawn up.

Two of the graves¹ were not investigated nor measured; the style of building of the others has been described elsewhere²; therefore, in the following pages only those will be considered which contained objects or which were distinguished by some special feature.

East shore of Stormbugt.³

Near the settlement in this locality four graves were found. One of them (grave 321) occurred separately on a rocky knoll.⁴ It was the only grave in which the body appeared to have been fully extended, and accordingly the space was longer than usual, viz. 1.75 metres. Unfortunately the roofing had sunk somewhat, and formed an opening through which animals had gained admission and caused some disturbance in the position of the different parts of the skeleton. The extended position is not common in Greenland graves, but has nevertheless now and then been observed in West Greenland.⁵

The objects were few in number, but were of some interest as regards the elucidation of some previous finds. They consisted of eight pierced teeth of fox, a slender pendant of bone, and

¹ Nos. 695 and 714. ² THOSTRUP, pp. 203, 267—68, 280, 306, 325, 327, 330 and 334.

³ With regard to place-names, the orthography of the charts drawn up by the expedition, and of THOSTRUP'S work, has been adhered to. For the signification cf. THOSTRUP p. 190. ⁴ THOSTRUP, p. 267. ⁵ K. I. V. STEENSTRUP I, pag. 23.

another larger one of black stone, with one side flattened (Pl. VII, 13—15); they were lying immediately next to the skull.

An ornament, consisting of 53 pierced teeth, was previously found in an East Greenland grave on the Skærgaards Halvø (68° 7' N. lat.)¹; another, consisting of 36 teeth², was taken from a grave in northern West Greenland together with some women's articles, viz, a bodkin and a needlecase of bone. In none of these cases is the position of the ornaments in the grave known, but they may undoubtedly be compared with the row of teeth from the east shore of Stormbugt, the position of which in the grave proves that it has served as a necklace. How far the pendants have been strung on the same line as the teeth or have probably been used as ornaments for the ear or hair must be left for future consideration.

Upon the same rocky knoll on which grave 321 was situated, and about 30 metres NNW. of it, was a grave deposit (322) which had probably contained the rest of the grave-goods belonging to this grave, as no other graves occurred there; but unfortunately it had been opened and emptied.

In the other burial place belonging to the settlement, three graves were found; these, however, contained no objects. In the neighbourhood of one of the graves (326) lay a fragment of a sledge shoe (Pl. IX, 5).

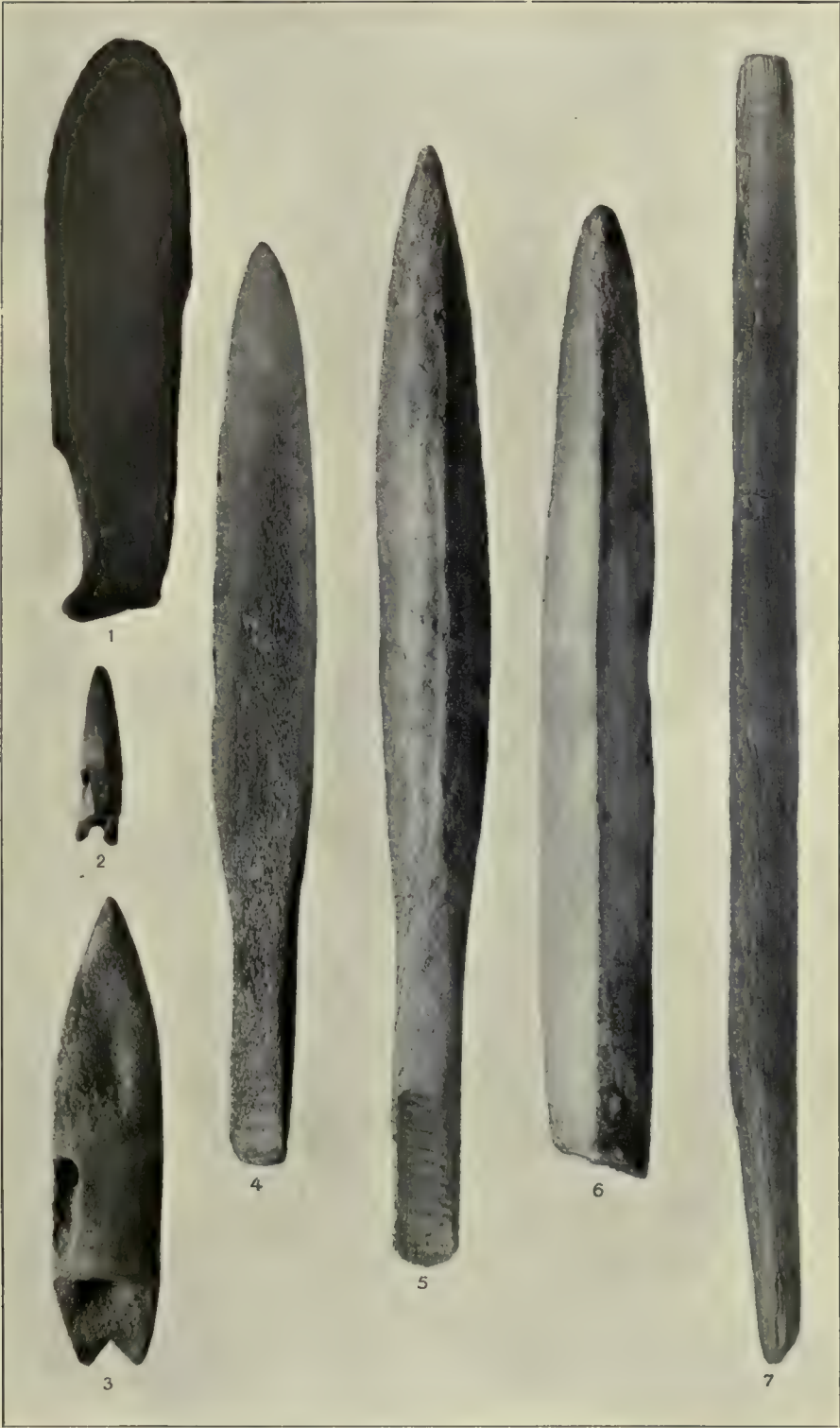
Snenæs.

Of the three graves³ found in this place, two yielded very good finds of men's articles, while the third contained no objects.

Grave 422, which was handsomely built, is illustrated in THOSTRUP, p. 282. The grave-goods (Pl. VIII) consisted of the following objects: A single-edged knife of reddish slate, with a short handle (Pl. VIII, 1); two harpoon heads (Pl. VIII, 2 and 3), entirely of bone, the one of them intended for use, 10.1 cm. long, and the other a miniature specimen, only 3.8 cm. long; three large slender arrow-heads of bone (Pl. VIII, 4—6), triangular in section. One of the specimens is fragmentary; the other two are 23.7 and 19.6 cm. long; their butt ends are bevelled and roughened for application to the shaft. Moreover, there was a fragment of an arrow shaft bevelled at one end, 28 cm. long and up to 1.6 cm. thick. The miniature harpoon head only was lying inside the grave, near its north end, and east of the spinal column of the skeleton. The rest of the grave-goods, as frequently happens, were deposited outside the grave, in this case along its east side.

¹ Mus. No. L. 4459, brought home by G. Amstrup (THALBITZER I pp. 417—419).

² Mus. No. L. c. 497, ³ THOSTRUP, pp. 280 et seq.



Grave 423, illustrated in THOSTRUP, p. 283, was located only about 20 metres SSE. of the preceding one. Its interior length was only 1—1.22 metres; hence there was only room for a body in a contracted position. Here, all the grave-goods were lying outside the grave, along its east wall; the objects in question are shown in Pl. IX, 1—4 and consisted of: A handsome, slender single-edged knife of reddish slate (Pl. IX, 4); in contrast to the one found in grave 422 it is without a distinct handle; three miniature weapons with fragments of shafts, viz. an arrow with head of bone (Pl. IX, 1), the fore part of which has been widened on account of the slit which has been made there by drilling for the reception of the blade, the marks of the drill being still visible; an arrow (Pl. IX, 2), the bone head of which is shaped like Figs. 4—6 of Pl. VIII; and a harpoon (Pl. IX, 3) with foreshaft of bone, evidently split off by boring, and head entirely of bone; unlike those shown in Figs. 2 and 3 of Pl. VIII, it has only one barb at the butt end. All three specimens are bevelled at the shaft end and have been inserted in a slit in the fore end of the shaft.

There is a very marked similarity between the objects belonging to the two graves from Snenæs: both finds included a single-edged knife, harpoons and arrows, objects belonging decidedly to men. It is of special interest, that the finds from both graves contained, besides things meant for real use, miniature specimens also. As in both cases the skeleton of a full-grown individual only was found, the miniature weapons cannot be interpreted as playthings; they must be regarded as symbols, deposited instead of the real weapons. Such miniature objects have often been found in Greenland graves, and the opinion that they were symbols has also been advanced¹, but the evidence was not so clear that this could be stated with any certainty. The same custom, which incidentally is well-known from various primitive peoples, prevails among the Central Eskimo²; it is also found in ancient times in Europe, including Denmark.³ Even among civilised people like the Chinese it is customary to burn at the grave symbols of clothes and money intended for the dead.⁴

Rypefjeldet.

On one of the islands in the delta of the river⁵ Gravelven a grave was found pointing east and west; it was 1.42—1.55 metres in length. The stone roofing had partly collapsed into the grave, and had disturbed the position of the skeleton.

¹ RYDER I, pp. 327—28).

² BOAS I, p. 613.

³ Cf. for instance SOPHUS MÜLLER, *Vor Oldtid*, p. 375; *Nordische Altertumskunde*, vol. I, p. 519.

⁴ Cf. for instance

DAVIS, vol. I, p. 296.

⁵ THOSTRUP, p. 306.

As on the east shore of Stormbugt, the necklace only — viz. seven black, cylindrical stone beads (Pl. VII, 8) — was lying inside the grave. Exactly similar beads have been found at Hekla Harbour near Scoresby Sound.¹

The rest of the grave-goods were deposited in a small space, enclosed with stones, only 30 cm. square, and situated immediately south of the grave. They had been lying in an oval wooden box, of which only the bottom, 18.5 cm. long and 9 cm. broad, was preserved, while the sides, which had probably been made of whalebone, as is not infrequently the case, had crumbled away. The find consisted of: Two women's knives, Ulos, (see Pl. VII, 10 and 11), of which the larger, of reddish slate, was furnished with a wooden handle; the blade had been inserted in a groove in the handle and lashed to it; the smaller one, which was of greenish slate, had no handle; also a needlecase of bone of the shape peculiar to Greenland (Pl. VII, 9); four bodkins or bodkin-like bone pieces (Pl. VII, 2—5); a similar implement, but with a leaf-shaped expansion below (Pl. VII, 1), which had doubtless been used as a boot-sole creaser; a small tapering needle-shaped piece of bone, pierced transversely (Pl. VII, 6); a flat bone toggle button (Pl. VII, 7), pierced in the middle and with two leaf-shaped wings; lastly a tiny flint core (Pl. VII, 12), from which flakes had been chipped off, and two flint flakes.

In another similar grave deposit (531) which was situated 2¹/₂ metres SE. of the grave, only some small wooden sticks were found.

These objects strongly recall the find from the Skærgaards Halvø, brought home by Captain G. AMDRUP's expedition of 1898—1900.² Unfortunately the leader of the expedition was absent when this splendid and important find was made; it consisted of goods from three separate graves, and on his return he found that the objects had been mixed up. A comparison between these two finds may, however, throw some light on both. The find from the Skærgaards Halvø contained, among other things: a box with an oval, wooden bottom (THALBITZER, p. 409, Fig. 26); a woman's knife with a slate blade (l. c. Fig. 21 and Fig. 13); a needlecase (Fig. 35); a series of bone bodkins and similar implements (Figs. 18—20), and a bone toggle button pierced in the middle (Fig. 30); to these must be added the necklace of pierced teeth mentioned above (Fig. 34).

This group of objects, as regards its composition, approaches so nearly to the grave-find from Rypefjeldet that one may be justified in taking each as a single whole, the entire collection in either case

¹ Mus. No. L. c. 1381; Ryder I, p. 338, fig. 39 d.

² THALBITZER I. pp. 386—425.





representing the funeral outfit of one woman; but this cannot be decided with any certainty. On inquiry, Captain AMDRUP kindly informed me that he could state at any rate with pretty fair certainty that all the bodkins had been found together, which, moreover, is probable by reason of their homogeneous appearance. The find from the Skærgaards Halvø contains in addition various other objects belonging to women, as for instance thimble holders, and to men, as for instance two knife handles with notches for the fingers.¹

In this find the bone implements are of special interest:—

The needlecase (Pl. VII, 9) is of the form peculiar to Greenland. It closely resembles the specimen from the Skærgaards Halvø, which, save for the remarkable specimen from Dunholm, is the only example known from East Greenland. From West Greenland the National Museum contains 16 specimens of this type, chiefly from the northernmost part of the west coast; one specimen only is known to have come from the region south of the Arctic circle, but that is from Julianehaab, the most southerly settlement in Greenland; this specimen² is however far more effaced in form than are those from North Greenland; in south Greenland the old type is replaced by a simple cylindrical case. In the district of Angmagsalik, the only part of East Greenland now inhabited, a triangular piece of skin is used instead of a needlecase.

On the needlecase from Rypefjeldet are two forms of ornamentation, one of them, which consists of a raised border running round the constricted part at the middle of the needlecase, occurs also on two West Greenland specimens. The other, consisting of two pairs of small knobs placed opposite each other near the tapering end of the needlecase³, as if they were rudiments of nails driven through, is, on the contrary, not found in any other Greenland specimens, but such knobs are an almost constantly recurring feature on needlecases from Alaska, most frequently one pair, and placed higher up⁴. FRANZ BOAS, in his interesting paper, regards this as an integral part of the article. It is consequently strange to find these apparently useless knobs occurring on a specimen from the most easterly Eskimo region, where the form of the needlecase has otherwise, on the whole, undergone a great change. It would be interesting if future finds should confirm that these knobs are a feature derived from the common Eskimo prototype, a feature which for some reason or other is regarded as essential to the object and therefore occurs sporadically throughout the region in question; any

¹ THALBITZER I, p. 413 Fig. 29. ² Cf. BIRKET-SMITH, p. 33, Fig. 25. ³ This forms the lower end of the needlecase when suspended for use; the specimen is inverted in the figure. ⁴ BOAS II, plates XXII—XXVI.

direct connection between the Alaska and the East Greenland form can hardly be imagined.

On the other hand, it must be maintained that there is a direct connection between the Greenland needlecases and one found on Southampton Island; the specimen shown in the paper cited (p. 326, Fig. 5 a) might equally well have taken its origin from West Greenland; even the characteristic alternate spur band, which is also found in Alaska, occurs on several of those from West Greenland.¹ The specimens from Frozen Strait shown in Fig. 5 d and e in the same place, are also difficult to distinguish from Greenland specimens; on the other hand, Fig. 5 b from Frozen Strait and c from Ponds Bay have an offset above, not found in Greenland, but this is probably a less important difference; the ornamentation, consisting of dotted edges, is also found there²; even the dots on the wings occur in several specimens.³

The find from the Skærgaards Halvø not only includes needlecases, but also counterparts to the rest of the bone implements; thus, specimens closely corresponding to the bodkins (Pl. VII, 1—4) with transverse grooves round their upper end and with the small eye above occur also in the other find. In North-east Greenland, so far as my knowledge goes, only one other specimen of this type has been found⁴, in a child's grave near Scoresby Sound; in West Greenland, on the other hand, they are often found in the northern part of the country.

The fact that bodkins, boot-creasers, needles and similar objects are found in women's graves is only to be expected, as together with knives they constitute women's chief implements. It is, on the other hand, surprising that they are found in larger numbers in the same grave and usually fairly similar in size.⁵ They should doubtless be regarded not merely as implements for use, but in an equal degree as articles of ornament. Here, I attach no importance to the fact that they are all intended for suspension, because the majority of the articles belonging to an Eskimo woman are carried in a hanging position; in this connection it is of greater importance that there exist similar finds of bone pieces which could not have been meant for use; thus, from a grave near Ata, in the district of Ritenbenk, there are 24 bone pieces⁶ pierced at the upper end, about 10 cm long, quadrilateral in transverse section, and not pointed, but simply

¹ Mus. No. L. 2589; cf. also THALBITZER I, p. 527, Fig. 97. ² Mus. No. L. 1358.

³ Mus. No. L. 2589, 5671: on two of the specimens the dots are surrounded by circles (Mus. No. L. c. 786 and L. 2846). ⁴ RYDER I, p. 334, Fig. 32 a (Mus. No. L. c. 1426). ⁵ From Nugak in Ritenbenk district 22 specimens (Mus. No. L. 2129

50, from Eqaluit in Umanaq district 10 (Mus. No. L. c. 774) and from Atanekerdruk in Ritenbenk district 7 (Mus. No. L. 2594 - 2600). ⁶ Mus. No. L. c. 806.

cut off below. Another grave-find, from Umanaq¹, contains a bodkin of a type similar to that from Rypefjeldet, moreover, a number of bones slightly pointed or quite unworked, three of which are pierced at the point, and could not therefore have served as implements; lastly, a dagger-shaped piece of bone and two small human figures, likewise adapted for suspension.

The two last finds, especially the pointed bones, remind one of the pendants which are found on Central Eskimo belts, hanging all along the skin strap. These also include small carved implements, knives, snow knives, etc. I am inclined to believe that the bodkins, when they occur in larger numbers, have been used in a similar way, the more so, as both the East Greenland finds contain belt-fasteners (Pl. VII, 7). There is, moreover, contemporary evidence of the fact that bodkin-like pieces of bone have been used as belt ornaments at Davis Strait in the 17th century; the statement runs as follows: — "*Elles sont ceintes d'une courroye de cuir, à laquelle au lieu de clefs, elles attachent plusieurs osselets, qui sont pointus comme des poinçons, et de même longueur que des aiguilles de teste.*"² It is true, on the accompanying illustration the bodkins are seen hanging in a bunch from the belt; but I feel convinced that this is due to the artist having understood the author's remark about the keys as if he meant a bunch of keys; the large bow with which the belt is fastened in front suffices to show that the drawing is not trustworthy.

Besides the objects found in the grave and in the small grave deposit it remains to be mentioned that an antler, cut off at the lower end, was found stuck in between two stones of the grave, and that a worked piece of wood 1.19 metre long, was laid across the grave as a support for the stone roofing; at its thicker end it is bent, terminates in a point, and is furnished with a rectangular hole (Fig. 1). This object is not Eskimo workmanship; it is probably a tiller which has drifted ashore³. It is interesting on account of the use to which it has been put in the construction of the grave,

¹ Mus. No. 3926.

² L. D. P. (Louis de Poincy): *Histoire Naturelle et Morale des Antilles de l'Amérique*, Rotterdam 1658, p. 200. In a digression the author devotes a chapter to a journey made by a Dutch captain to Davis Strait in 1656. I am unable to identify more exactly the locality described; as regards his route it is only stated that he "*arriva sur la fin du mois de Juin dans le Detroit de Davis, d'où étant entré dans une rivière qui commence au soixante quatrième degré et dix minutes de la ligne en tirant vers le Nord, il fit voile jusques au septante deuxième, sous lequel la terre que nous allons décrire est située*". The chapter in question has been translated into English by DAVID MAC RITCHIE: *The Eskimos of Davis Straits in 1656* (*The Scottish Geographical Magazine* for June, 1912).

³ The National Museum contains another specimen of this kind from West-Greenland (Mus. No. L. 5670); it has been used as a block for the fire drill.

Fig. 1. ¹/₈.

and at the same time it is evidence of wood having been plentiful, seeing that such a large piece could be spared for this purpose. In the graves of West Greenland such wooden props are often found. The late Dr. K. I. V. STEENSTRUP, to whom the greatest honour is due for his investigation of the graves of these regions, writes about this as follows:—¹

"Where the stones have not been long enough for the roofing a row of crossbeams of wood and antler serves as a support for the stones. Moreover, the Greenlanders say that the body was carried to the grave on these 'beams', a statement which is also borne out by the fact that such pieces of wood and antler are sometimes found stuck in here and there between the stones of the grave."

But less importance should be attached to the interpretation given by Greenlanders now living of their forefathers' customs than to the older records in which we are told that the body was either carried on the back, or dragged, to the grave.²

As regards the antlers stuck in between the stones of the grave, their presence is no doubt due to another cause, unknown to us; the specimen in question, which is only about 28 cm long, cannot at any rate have been used as a carrying pole.

Cape Peschel.

I wrote above that graves which contained no objects would not be described here, as that has already been done elsewhere³; but I think that one of them, grave 674, near Cape Peschel, deserves special mention. It is described by the investigator as follows:

The grave (674) consisted of an empty stone chamber, which for back wall had an erratic stone boulder c. 1 M. high. The Greenlanders Hendrik Olsen and Tobias Gabrielsen, when they showed me this ruin, told me that it was

¹ K. I. V. STEENSTRUP I, p. 22.

² CRANZ, vol. I, p. 301. POUL EGEDE records in the year 1735 (p. 50) regarding a dead woman: "Her son, whose duty it was next after his father to carry her away, was not strong enough. According to the custom she was to be buried on a hill or mountain. They therefore begged my brother, who was known for his strength, to do it. This he consented to do; he tied a sealskin strap, as he had seen they used to do, round the shoulders and loins of the corpse, passing the bight of the strap round his forehead, and thus he went with the woman upon his back in deep snow, to the appointed place, where he and her son erected a stone grave and placed her therein."

³ Cf. p. 361.

a human grave, but I had great doubts about their story, as it appeared to me simply a heaped-up mass of stones. I saw later, however, that they were right, as on closer examination I found under a heap of small stones some large covering stones, and under these again a regularly built, four-sided stone-chamber, 0·96 M. long, 0·35 M. broad and 0·63 M. high. As already remarked, the chamber was quite empty, containing neither body nor grave-articles, but the grave showed absolutely no signs of having been disturbed.¹

The grave was undisturbed, and the outer heap of stones was still standing; nevertheless, no trace of bones was visible; although in other cases bones are found preserved everywhere in these regions, even in graves which have been disturbed and where the air has had access, and animals have made havoc of the skeleton.

If this case were a solitary one it would be of no importance; but several parallel instances have been found in West Greenland. Thus on the island of Kugdlerkorsuit (73° 48' 30" N. lat.) were found three particularly spacious graves unusually well built of large stones. One of these contained an exceptionally complete and well preserved skeleton in an extended position; the only object it contained was a transparent glass bead. Then it is recorded: "The two other graves which we investigated subsequently, in spite of their being carefully built and closed, showed no trace of ever having contained a body."² K. I. V. STEENSTRUP had the same experience in his investigation of graves.³

Observations of this kind of course require careful consideration; there must be certain proof that the fact of the grave being empty is not due to the total destruction of the skeleton. The cases recorded from West Greenland are, however, undoubtedly entirely satisfactory. Of three graves situated in close proximity, C. RYDER found in the one an unusually well preserved skeleton, while the two others did not contain the slightest trace of bones, and K. I. V. STEENSTRUP, besides being an experienced observer, had the advantage of being a geologist; had there been any interference of natural forces to account for this, I am certain it would not have escaped his eye.

Similar examples can be quoted from Alaska. Thus in the territory of the Kvikpakmut, near the Yukon River, was found an empty, wooden grave-box⁴ on which a picture of a bear hunt was drawn; it is described as a cenotaph erected for a bear hunter who had been killed.⁵

¹ THOSTRUP, p. 325. ² RYDER II, pp. 233—234.

³ "It is a peculiar fact that graves are sometimes found, carefully closed, but in which a body has evidently never been placed. Have such graves been built in memory of somebody who was lost, or have the Eskimo built graves for themselves before they died, and then had no use for them?" (STEENSTRUP I, p. 24.)

⁴ Now in the Museum für Völkerkunde, Berlin. ⁵ WOLDT, p. 211.

In southern Alaska this custom differs somewhat in form; there, in a place near Cape Vancouwer, EDW. W. NELSON found, for instance, erected some wooden posts, carved to represent human figures; behind them were placed boxes containing clothes and small objects; other articles were hanging on the figures themselves. It was said, that it was the custom in that district to erect such memorial posts for people who had been lost and whose bodies had never been recovered. For five subsequent years new clothes were hung on them yearly, and offerings were made as though the body of the dead had been buried there.¹

Elsewhere too among primitive peoples the pious wish to honour those whom death has struck down when away from home leads to similar customs²; and the Greenland cenotaphs, also, are undoubtedly due to a like feeling.

The graves were few in number. Perhaps the custom of throwing the dead into the sea, which has prevailed on the southern part of the east coast³, has also made its influence felt here. Besides, during a great part of the year, climatic conditions prevent the building of stone graves.

But in spite of their scarcity, the graves found by the expedition are of considerable interest. Fortunately they were individual graves, and have thus yielded in each instance the belongings of a single individual, and not, as is more often the case, the combined grave-goods of several persons; the considerable additions which they have made to our knowledge of the burial customs of the Eskimo in these regions, are, however, in no small measure due to the care with which the investigation has been carried out.

¹ NELSON, pp. 317—18, with figure.

² Among the Khasi hill tribes, near the north-east boundary of Bengal, where cremation prevails, in such cases some cowries and some of the deceased's clothes together with his ashes are placed in the family burial chamber. GODWIN-AUSTEN, p. 133).

³ GRAAH I, p. 85; II, pp. 81—82. HOLM I, p. 106; II, p. 75.

Finds from Settlements.

Although the expedition, on its extensive travels, came across traces of Eskimo settlements as far north as 82° N. lat. on the south coast of Independence Fjord¹, yet the material brought home was obtained from a somewhat limited area. The dangerous and toilsome sledge-journeys northward compelled the baggage to be limited to the least minimum; nor did the forced day's marches afford opportunities for a thorough investigation of the camping grounds and house ruins found. Consequently the ethnographical field of investigation was mainly restricted to the districts situated in the immediate vicinity of the base of the expedition, namely Danmarks Havn, on the south coast of Germania Land. The chief settlements are situated on and off this coast; they are; Rypefjeldet, Snenæs, the settlement on the east shore of Stormbugt, Baadskæret, Renskæret and Maroussia; towards the east and facing the sea is Syttenkilometernæsset. Some settlements, less rich in material, were situated to the south and north, between 75° and 78° N. lat., from Shannon Island in the south up to Jökelbugten, the glacier-filled coasts of which form a boundary between a northern and a southern centre of habitation.

Along the stretch of coast from the south of Jökelbugten northwards up to Mallemukfjeldet, the steep sea-fowl cliff, difficult to pass, at 80° 10' N. lat., no trace of Eskimo habitations was seen. On the other hand, north of this, at Ingolfs Fjord, three settlements were found, at Sophus Müller's Næs, at Eskimonæsset, north and south of the mouth of the fjord respectively, and at Fældestrand, situated somewhat more to the south on the sea-coast.² Fældestrand was only a camping ground, but at each of the other places there had, in addition, been a winter house; it was only on Eskimonæsset, however, that any finds were made.

¹ Cf. THOSTRUP, Pl. IV. ² THOSTRUP, pp. 207 et seq.

Eskimonæssæt.

The finds from Eskimonæssæt ($80^{\circ} 26' N.$ lat.), being the only relics of the sojourn of the Eskimo in these northernmost regions, occupy a peculiar position, which makes it natural to treat them collectively.

The finds consist almost exclusively of bone implements, large in size, which show that material was abundant. The snow knife (Pl. X, 1) is unusually large and strong, being 41 cm. in length and 7.3 cm. in extreme breadth. Pl. X, 2, shows the broken blade of a similar knife measuring in this condition 29.5 cm. in length.¹

The bone object² shown in Pl. X, 6 is made from a rib-bone and is 44.7 cm. long; it is narrowed down and roughened at both ends in order to be tied to something or other; at the end which is turned upwards in the figure, moreover, a bevelled surface is seen, which shows that it was intended to be lengthened by splicing on another piece to it. Here we undoubtedly have a cross-bar of a sledge, as they were made where wood was scarce. The sledges seen by JOHN ROSS at Cape York had similar cross-bars; in his figure³ one can see that the stave uniting the two uprights consists of two separate pieces spliced together.

A considerable number of sledge-shoes of bone were found. One, 50.7 cm. long is shown in Pl. XVIII, 13⁴; in several of the holes, which, as is usual, were drilled in various directions in order to give a better hold, wooden nails still remain fixed. Seven other specimens⁵ are from 11.3 to 39.3 cm. long; one specimen is only 4.2 cm. wide, the others vary from 4.9 to 5.5 cm. in width. Besides these there were two large bone pieces without holes⁶, undoubtedly unfinished sledge-shoes; they are 6.1 and 7.3 cm. broad respectively.

A foreshaft, 24.2 cm. long, for the harpoon shaft, is shown in Pl. X, 4⁷. Its butt end is bevelled for splicing to the shaft; at its fore end is seen the socket for the loose shaft, while immediately in front of the bevelled surface there is a hole for the thong with which it was secured to the shaft.

The next piece (Pl. X, 5)⁸ belonged to an ice-hunting harpoon; it has been spliced to the shaft at its butt end, while the harpoon-head has been placed at its fore end. It is 42.6 cm. in length and 2.9 cm. in extreme breadth.

In Pl. X, 10⁹, is figured an axe-head. It is seen from above; to the

¹ Mus. No. L. 3099—3100. ² Mus. Nr. L. 3101. ³ JOHN ROSS, *A Voyage of Discovery*; plate opposite p. 102. ⁴ Mus. No. L. 3091. ⁵ Mus. No. L. 3092

3098. ⁶ Mus. No. L. 3083—3084. ⁷ Mus. No. L. 3106. ⁸ Mus. No. L. 3106.

⁹ Mus. No. L. 3103.



left is the end in which a groove has been cut for reception of the cutting edge, which was probably of stone. At the top a piece has been split off the edge of the groove. The rear portion of the blade is somewhat tapering, trapezoid in transverse section, and has its sides and under-surface roughened for lashing more securely to the handle; the butt end itself has a projection to prevent the blade from slipping forward. Another blade of an adze (Pl. X, 11)¹ has the cutting edge in one piece with the blade; in this case there is no constriction or any other adaption for attachment to the handle.

Pl. X, 9², which is 11·2 cm. long, is probably the handle of a seal drag. Pl. X, 3³ is a very thin, flat piece of bone, 21·8 cm. long and 3·2 cm. broad, with a slight enlargement near the ends, apparently for the purpose of attaching it to another piece. Nothing can be stated regarding the purpose either of this piece of bone or of the implement shown in Pl. X, 7⁴, which is 17 cm. long and nearly cylindrical, and in which the end facing upwards in the figure has a convex surface; it appears to be suitable for a pestle. The bone piece illustrated in Pl. X, 8⁵ is pierced with holes transversely; but these are probably only due to attempts at splitting it for use.

There were several fragments of soapstone cooking vessels; one of them is figured in Pl. XXIV, 3⁶; it shows a corner of the vessel with a projection for one of the holes through which the carrying strap was passed.

Snenæs.

One other find deserves to be treated collectively; not, as in the preceding case, on account of the situation of the locality, but because one of the houses here yielded so large an amount of material that it gives a vivid impression of the daily life of the settlement.

Snenæs is a naze jutting out into Dove Bugt from Winges Kyst on the south coast of Germania Land. Here there were, among other remains, 13 winter houses divided into three groups.⁷ The group situated nearest the coast consisted of three houses, two of which were investigated. In both of them a few human bones were found, and on account of this and of the rich find obtained in the westernmost house, C. B. THOSTRUP is of opinion that the occupants of these houses had died off on the spot. The easternmost house (407) was only superficially investigated; the westernmost (406), in which excavations were made both by MYLIUS-ERICHSEN and by C. B. and GUSTAV THOSTRUP, is the one we shall con-

¹ Mus. No. L. 3088.

² Mus. No. L. 3089.

³ Mus. No. L. 3105.

⁴ Mus. No. L. 3102.

⁵ Mus. No. L. 3090.

⁶ Mus. No. L. 3109.

⁷ THOSTRUP, pp. 276 et seq.

sider below. C. B. THOSTRUP, in the place cited, describes it as follows:

"Winter-house 406 had two small annexes at the front wall, which were mostly filled up with remains of bones. The platform was constructed of gravel; on the floorplace there were flat stones and the bottom of the passage lay lower than the floor. Above the innermost, flat, covering stone of the passage there was a recess with a triangular opening in towards the house. The measurements of the opening were: along the base 0.37; the sides 0.32 and 0.24 M."

A ground plan of the house is given in the same work Pl. II.

A number of ornamental objects and small figures from this house are illustrated in my Pl. XI. 2—14, viz. Nos. 7—9, three bone pendants; 10, eight long cylindrical bone beads; 11, a pierced tooth similar to those found in grave 321 on the east shore of Stormbugt (cf. Pl. VII, 13); 12, a boot-shaped pendant ornament of bone; 13, a black stone pendant, with one side flattened (cf. Pl. VII, 15); 14, a conical pendant of mottled green stone. Besides these there are several bone figures, viz. Nos. 2—3, representing swimming birds, both flattened on their under sides, so as to stand, but provided in addition with a hole at their rear end for suspension; a third specimen is not figured; 4—5, seals, flat on the side reversed in picture so that they are imagined lying on their backs; but, like the preceding, also intended for suspension; 6, a woman with an *amaut*, the wide hood distinctly shown, but the lower part of the figure less carefully executed, the legs, for instance, being separated only by a bored out groove. The figures were found inside the house, immediately to the left of the passage.

Such small bone figures of animals, adapted for suspension, and flattened below, so that they can also stand or lie down, are known from North-east Greenland in AMDRUP's find from Cape Tobin (70° 24' N. lat.) and in the find from Rypefjeldet brought home by the Danmark Expedition, but, as far as I know, they have not been found in West Greenland. Very closely related to this East Greenland group is a find consisting of some ten small figures representing seals, bears, etc., obtained together with some other miniature objects by the Sverdrup Expedition in June 1902 at Stenkuls Fjord, Kong Oskars Land (about 77 $\frac{1}{3}$ ° N. lat.).¹

BOAS² informs us regarding a similar set from Cumberland Sound that they were there used for a kind of game, *tingmiujang* (i. e. images of birds), in which they were thrown as dice. MUR-

¹ In the Museum in Christiania, Nos. 12400—16 and 12429—35; SVERDRUP, vol. II, p. 494. They were lying closely together, as if they had been contained in a bag.

² BOAS I, p. 567.



DOCH refers to this explanation in connection with a set of 29 figures strung upon a seal thong which he obtained at Plover Bay in Siberia¹; TURNER and NELSON, on the other hand, maintain that figures similar in character from the Ungava district, Hudson Bay Territory, and from St. Lawrence Island respectively, are there used as toys only².

The bone figures found in North-east Greenland and those obtained by the Sverdrup Expedition are finer and somewhat more elegantly made than those which occur more to the west. Regarding the object of these figures nothing can be stated with certainty, but the fact that both at Snenæs, at Rypefjeldet (cf. Pl. XXV, 6—8, 10—12 and 14) and at Stenkuls Fjord they were found together with ornamental objects such as beads, pendants and small rings, makes it probable that their main purpose was to serve as ornaments.

The object illustrated in Pl. XI, 1,³ must undoubtedly also be included among the ornaments. In form it most resembles the bone feathers at the butt end of certain Greenland harpoon shafts.⁴ It must, however, be compared with an ornament found in an East Greenland grave near Cape Franklin (about $73\frac{1}{4}^{\circ}$ N. lat.); the articles, which were lying in a wooden bowl, included for instance an Ulo, which characterises the grave as that of a woman.⁵ The Danmark Expedition brought home one more specimen of this kind from Rypefjeldet (Pl. XXV, 19). Both

specimens are ornamented with a dotted cruciform figure, the centre of which coincides with the hole pierced in the centre of the object; the latter specimen has in addition a circle of dots around the central hole, and two holes at its upper edge; this last might also have been the case in the specimen

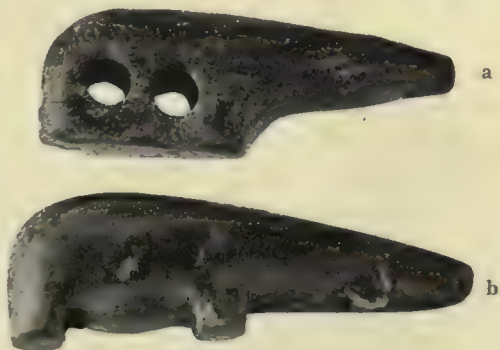


Fig. 2. ²/_a.

from Snenæs, which is somewhat damaged above. The specimen from Cape Franklin is more richly ornamented, the vertical arm of the cross consisting of three, and the horizontal arm of two rows of dots, while the edge is also decorated with a similar row; besides the central hole we find here also an upper and a lower hole. Its

¹ MURDOCH I, pp. 364—65.

² TURNER, p. 260; NELSON, p. 342.

³ Mus. No. L. 3805.

⁴ Cf. MASON I, Pl. 5. In early times these feathers were broader and shorter.

⁵ STOLPE, pp. 104—5. NATHORST, p. 364.

ornamentation is found on a series of necklaces and combs from Southampton Island.¹

In addition to the quite small figures of animals, two larger ones were found in the house at Snenæs, beautifully carved in bone, representing bears in the usual attitude with outstretched necks (Fig. 2).



Fig. 3. ²/₃.

The specimen shown in Fig. 2 a, (L. 3764; length 8 cm.) rests, as may be seen, on a flat base, and has two holes pierced transversely through. It must therefore have been intended for attachment to

another object, probably either a harpoon or a lance shaft, as a finger rest. In other cases in Greenland only a simple bone knob is used for this purpose, but among the Central and West Eskimo they are found to be larger and more elaborately executed.²

The other figure of a bear³ (Fig. 2b and 3; length 9.1 cm.) is more finished; the fore and hind legs are separated from each other, but united in pairs; there is, however, a hole pierced through between the hind legs. At the tip of the snout also, a small hole has been pierced right through. On either side are two depressions which undoubtedly indicate lance wounds. It is a particularly fine and beautifully made plaything.

Most conspicuous among the men's weapons is the large number of slate blades — no less than 18 — for harpoon, spear and arrow-heads (Pl. XII, 3—15; Pl. XIV, 9). They are from 3.4 to 8.1 cm. in length and from 2.4 to 4.4 cm. in width; one only had a nail hole for fastening to the shaft. Fourteen of them were lying together in the oval wooden vessel shown in Pl. XXIV, 8. There were some chips of slate, evidently put by as material for future use. There was also found a slate blade, 11.2 cm. long, with tang and nail hole (Pl. XII, 2).

Harpoon heads (Pl. XIII, 3—6) to the number of four were found; three of them are provided with a drilled slit for the blade; the fourth, which is much weatherworn, does not appear to have a separate blade. Three have two barbs at the butt end, and the fourth one only; one of these specimens (6) is, however, not quite finished, lacking the socket. Two roughly shaped examples (Pl. XIII, 1—2) show that to begin with the fore end was worked into a provisional point, and the butt end bevelled for the barb.

¹ Cf. BOAS III, p. 74, Fig. 102; p. 107, Fig. 156; p. 417, Fig. 215a and p. 419, Fig. 217; LYON, p. 62.

² Cf. BOAS III, p. 17, Figs. 9 and 11; NELSON, Pl. LVII b. Figs. 21—23 and 27—32.

³ Mus. No. L. 3763.



As indications of land hunting there are a long, slender arrow-head of bone and two of the well-known implements (Pl. XIII, 7) for twisting the backing of the bow¹; the latter are only 7·5—8 cm. in length and rather slender.

Of the sledge and its accessories two bone buckles for the harness were found, 7·8 and 6·2 cm. long (Pl. XV, 11—12); in the larger specimen the groove has obviously been made by drilling. Of sledge shoes two specimens were collected, one of which (Pl. XVIII, 14) had been fastened to the fore end of the sledge-runner; it is 35·3 cm. long and 7 cm. wide, and tapering in front, with apex rounded. A transverse groove near the fore end has served for the reception of a strap. The bone object with two pierced holes shown in Pl. XI, 15, has probably served to tighten the cross straps of the kayak.²

Of men's knives there are a complete example and a fragment, the former, a single-edged slate knife, is 12·9 cm. in length and 3·5 cm. in extreme breadth, without a constriction for the handle (Pl. XII, 1). A slate reamer is shown in Pl. XIII, 9; of the apex, which is polished, the extreme tip is missing; it expands at the butt end and passes evenly into the tang, which is not polished.

The series of men's objects is completed by some material partly worked, consisting of pieces of antler, split off by boring, or cut off.

From woman's sphere of action the lamp stood as yet untouched in front of the platform, and around it lay fragments of the cooking vessel. The lamp, which was of mica slate, was 24·5 cm. long and 15·5 broad (Pl. XXIV, 1). The fragments of the cooking vessel show that it had been broken actually during use and had been pierced with holes for lashing the fragments together (Pl. XXIV, 4). The height of the vessel had been 9·5 cm.; and at the angles there had been ears for attaching the straps for suspension.

Of women's knives some beautiful specimens made of slate were found. The largest (Pl. XII, 16), which is 12·4 cm. long and 8 cm. high, has a sharply curved cutting edge, the sides are slightly rounded, and it terminates at the top in a small tang; there are no holes for nailing. Another knife (Pl. XII, 18), 12·3 cm. long and 6·8 cm. high, has a slightly curved cutting edge and straight sides; it has had a tang similar to that in Figure 16, but it is partly broken off; below the tang are two holes for attaching the handle by nails. A third specimen (Pl. XII, 17) is smaller, being only 4·8 cm. high; this specimen has also had a tang and two nail holes, but is now damaged at both ends. While these three knives are carefully made and quite thin, there is a fourth blade of slate (Pl. XXIII, 3) which is quite

¹ Cf. Murdoch II Pl. X Fig. 27.

² Cf. NANSEN, *Eskimoliv.* p. 37, the figure to the left, and pp. 39—40.

rudely fashioned, thick, and polished at the cutting edge only; it is 5.6 cm. long at the cutting edge and 6.9 cm. high.

One bone bodkin (Pl. XI, 16) resembles those shown in Pl. VII, 2—4, in being ornamented with transverse grooves behind, a hole is pierced from the rear end out to one side for suspension; it is 7.1 cm. long. The object figured in Pl. XIII, 8, should possibly also be described as a bodkin; it is 8.6 cm. long; rather rudely fashioned, and broken off behind; at the fore end it is sharply pointed.

The purpose of the small wooden board figured in Pl. XIII, 10, is uncertain. It is 9.5 cm. long and 2.9 cm. broad; at the top it is constricted, and terminates in a knob, so that it can be carried in a hanging position. On both surfaces there are fine scratchings in various directions; on the one surface they occur especially in the upper part, almost parallel with the oblique edge; on the other, more irregularly and closest together near and along the lower edge of the board. In the National Museum in Copenhagen there are three specimens similar to this little board, all from a grave near Eqaluit in Umanaq Fjord in West Greenland¹. The marks left show that they have been used for cutting upon; it is possible that they are small cutting-boards for finer needlework. Among the Eskimo at the Mackenzie River similar small boards were used as palettes².

¹ The same grave in which the bone bodkins, mentioned in footnote 3 on p. 366, were found. All three specimens have the same constriction above, but they do not terminate in a knob; the largest of them (13.6 × 3.7 cm.) is pierced for suspension, the two others (10 × 2.5 and 9 × 2.4 cm.) are not adapted for suspension, nor do they show any visible traces of having been used; on the other hand, the largest of them has become hollowed by use in the middle of both surfaces; scratches, nearly effaced, are seen in the hollows (Mus. No. L. c. 722).

² The museum in Copenhagen contains a specimen of this kind; it is attached by a strap to two paint bags and a small spatula; on the board are seen the same scratchings as on the Greenland specimens (Mus. No. P. c. 12, brought home by MACFARLANE; received 1868 through the Smithsonian Institution).



Implements for Hunting by Sea and Fishing.

Harpoon Heads.

In the following descriptions, the harpoon head is imagined as lying on the surface which terminates at its butt end in the barb or barbs; in this position the socket for the loose shaft is always visible, and the line hole and grooves are usually so; it is in addition, the natural resting surface of the harpoon head¹. The point is imagined turned away from the observer.

There are altogether nineteen harpoon heads, all from the south coast of Germania Land and adjacent islands; four are from Renskæret, one from the east shore of Stormbugt, seven from Snenæs and seven from Rypeffeldet. Two of them are, however, miniature harpoons from graves.

About half of them have a slit for a separate blade; the others are made all in one piece. In two specimens (Fig. 5 and 6 a) a bone blade still remains fixed in the head, fastened by a bone nail. In the others, the relatively great breadth of the slit (about 2 mm.) indicates that not even here has the blade been of metal; in no case has rust been observed. The slit is always in the horizontal plane. The drill has been used to produce slits and line grooves; in twelve of the specimens the edges of the drilled holes are still distinctly seen. (Cf. Fig. 4).

The harpoon heads may be divided according to their form into three groups:

Type I. Broader than they are thick; the maximum breadth occurring at the line hole. The line hole is drilled in the horizontal plane, the line grooves being placed on the upper side. At the butt end are two barbs. None of the six specimens belonging to this type have blade slits. The transverse section varies in shape, being rhomboid, lenticular, or usually with a convex under side and a

¹ American authors orient it in the reverse position with the barbs uppermost; see MURDOCH I, p. 218 and MASON I, p. 201.

low ridge on the upper side; there is often a horizontal plane between the line grooves.



Fig. 4. Type I. ²/₃.

To this type belong:

Mus. No. L. 3801. Snenæs, house 406; length 8.5 cm. (Pl. XIII, 4).

L. 3046. Snenæs, grave 422; length 10 cm. (Pl. VIII, 3).

L. 3042. Snenæs, grave 422, miniature specimen; length 3.8 cm. (Pl. VIII, 2).

L. 3975. Rypefjeldet, house 527; length 8.3 cm.; much weatherworn.

L. 4017. Rypefjeldet, from one of the houses; length 8.5 cm. (Fig. 4 *b*).

L. 4018. Rypefjeldet, from one of the houses; length 5.4 cm. (Fig. 4 *a*).

From the region south of the area investigated by the Expedition, between 70° and 75°, there are several specimens of this type.¹ These more southerly harpoon heads are slightly broader between the barbs, but otherwise they approximate more nearly to the above mentioned type than to the harpoon heads from Angmagsalik.²

Type II. Thicker than they are broad; quadrilateral with rounded angles in transverse section. The line hole is drilled horizontally, the line grooves being situated at the margins. In the present collection, all the specimens of this type, with the exception of the miniature harpoon shown on Pl. IX, 3, have blade slits; one of the specimens is, however, so weatherworn that on this point nothing can be stated with certainty.

The following specimens belong to this type:

a. With two barbs at the butt end:

Mus. No. L. 3553. Renskæret, house 134 (Fig. 5); length 9 cm.; bone blade still attached, being fastened by a bone nail in a slit, 1.9 cm. deep; blade 2.8 cm. long and 2.1 cm. broad at the butt end, where it originally had two small barbs, one of which is now broken.

L. 3798. Snenæs, house 406 (Pl. XIII, 5); length 10.1 cm.; the blade slit, which was made by drilling, is 1.6 cm. deep and 0.3 cm. broad; no nail hole.

L. 3800. From the same house as the preceding (Pl. XIII, 3); length 9.3 cm.; slit drilled, 1.5 cm. deep, 0.3 cm. broad; no nail hole.



Fig. 5.
Type II *a*
²/₃.

¹ In the National Museum in Copenhagen: L. b. 750 (figured by RYDER I p. 314, Fig. 13 *a*) and L. b. 715; moreover L. 4534 (this last is figured by THALBITZER I, p. 325, Fig. 1). One specimen from the Swedish NATHORST Expedition is figured by STOLPE, Pl. IV, Fig. 14 and by SVENANDER, p. 40, Figs. 4 and 5. ² THALBITZER II, pp. 426 et seq.

Of this type the following specimens occurred in previous finds:

From Cape Tobin (70° 24') one specimen with iron blade¹; from Skærgaard Halvø (68° 7') one specimen with slit and nail hole.² The collection of the second German North Pole Expedition also contains one specimen.³

b. With one barb:

Mus. No. L. 3531. Renskæret, house 132 (Fig. 6 c) length 9·4 cm.; with slit, 2·3 cm deep, and nail hole for blade. A hole has been drilled behind the slit for binding the head, which is partly split; a groove has been made connecting the openings of the hole for the reception of the thread, lest by projecting it should impede the entrance of the harpoon head into the game.

L. 3552. Renskæret, house 134 (Fig. 6 a). The harpoon head itself is 6·7 cm. long; it is furnished with a bone blade which projects 2 cm. beyond the head. The blade is 4·2 cm. long and 2 cm. broad; it is broadest 1 cm. from the butt end; it has been fastened with three nails, the hindermost of which is of bone, and still remains in position; the head is somewhat damaged at the tip.

L. 3675. East shore of Stormbugt, tent 328 (Fig. 7); length 11 cm. Of narwhal tusk, somewhat weatherworn; the one edge of the slit and a part of the shaft socket are wanting; the line hole is large and the line grooves are only faintly visible.

L. 3799. Snenæs, house 406 (Pl. XIII, 6); length 9·7 cm.; there is a slit, 1·6 cm. deep, made by drilling, but no nail hole. This specimen is unfinished; the barb is not pointed and the socket is wanting.

L. 3051. Snenæs, grave 423 (Pl. IX, 3). Miniature harpoon head; length 3·8 cm. In contrast to the preceding specimens it has not had a separate blade. The loose shaft belonging to the head was found with it; it is of bone, 8·4 cm. in length and trilateral in transverse section; it shows marks of having been made by drilling. The front part of the shaft is also preserved; its fore end is split so that the rear end of the loose shaft, which is wedge-shaped, can be inserted in it and fastened by lashing. The weapon has therefore not been intended as a kayak harpoon, but one for use on the ice at the breathing holes of the seals.

Fig. 7. ²/₃.

L. 3903. Rypefjeldet, house 522 (Fig. 6 d); length 7·6 cm. The fore end is cut off square, with rounded angles, while all the other specimens are more or less pointed; a reminiscence of the previous use of heads



Fig. 6. Type II b. ²/₃.



¹ THALBITZER I, p. 347, Fig. 2.

² Ibid. p. 352, Fig. 6.

³ KOLDEWEY, p. 601, Fig. 6.

without separate blade. The slit is 1.5 cm. deep. The slit and the line grooves are made by drilling. No nail hole.

L. 3947. Rypefjeldet, house 527 (Fig. 6 b); length 8.1 cm. The slit is drilled, and only 1.2 cm. deep. No nail holes.

L. 4019. Rypefjeldet; length 7 cm. Much weathered; it is uncertain whether it has had a slit.

The Copenhagen museum previously contained three specimens of this type, viz. from Danmarks Ø (70° 26'), from Cape Tobin (70° 24') and from Skærgaards Halvø (68° 07').¹ A specimen from the NATHORST Expedition has been figured by G. SVENANDER.²

Type III. Broader than it is thick, with vertically drilled line hole; the single line groove lies along the middle of the upper surface. There is no separate blade. There are only two specimens of this type, both of which are rather damaged.

Mus. No. L. 3480. Renskæret, house 132 (Fig. 8); length 12.9 cm. The right side is missing along the greater part of its length; the line of fracture crosses the line hole; it is uncertain whether it has had one or two barbs at the butt end.

L. 4020. Rypefjeldet; length 6.4 cm. On the under side the line hole is widened for the reception of the knot of the line. The line groove is for a short distance cut so deep that it unites with the shaft socket. The butt end is defective; it appears to have had one barb opposite the middle line of the blade, and in front of the barb there is a hole.

Previously to this there existed only two specimens of this type, from Skærgaards Halvø, the one with a barb opposite the margin and thus more closely related to Fig. 8, the other with bipartite barb placed opposite the middle line of the blade, like L. 4020, but with two line holes.³

Under Type 2 b an unfinished harpoon head (L. 3799) has already been described. There are in addition five rough-hewn specimens, showing only slight preliminary working, viz. L. 3803 and 3804 from Snænæs, house 406 (Pl. XIII, 1—2), length 11.4 and 7.4 cm. respectively; L. 4183 and 4128 from the spring settlement near Rypefjeldet (Fig. 9 a—b), length 10.9 and 8.7 cm. respectively, the latter from tent 607; and L. 3434 from Ren-



Fig. 8.
Type III.
2/8.



a b
Fig. 9. 2/8.

¹ L. b. 720 (RYDER I, p. 314, Fig. 13 c); L. 4533. (THALBITZER I, Pl. XV, 2) and L. 4460 (ibid. p. 351, Fig. 5 and Pl. XV, 6) respectively. ² SVENANDER, p. 40, Fig. 3. ³ THALBITZER I, p. 349, Fig. 4 and p. 348, Fig. 3.

skæret, house 131 (Fig. 10), length 10·2 cm. They are all bevelled at the butt end to form a single barb, and all thicker than they are broad. In Fig. 10, which is of antler, the bevelling is but imperfectly executed.

In the rough-hewn specimens from the west coast of Greenland the work is executed in the same order; the barb or barbs are made as the piece is first cut off, and the general shape then given; the slit is made next, if necessary, then the line hole, and finally the shaft socket.

Types I and II are main types. Their chief features, both the broader type with line grooves in the same plane, and in contrast, the thick, narrow type with marginal line grooves, are widely distributed. In West Greenland¹, and also at Smith Sound² these two types occur collaterally. At Angmagsalik Type I predominates, and even if the form is sometimes thick and clumsy, the position of the line grooves is that characteristic of this type. In West Greenland also this is the type for the common harpoon heads; it is in addition the typical Central Eskimo kayak-harpoon head.³ Further westwards Type II predominates.

As regards the special development to which these forms have been subject in North-east Greenland, as far as can be judged from the finds made hitherto, the rule is that Type I is not, while Type II is, usually provided with a separate blade. The slit is always drilled in the same plane as the line hole. Barbs occur, as a rule, only at the butt end, and not at the sides, as is frequently the case in West Greenland and at Angmagsalik. One harpoon head only of Type I, found by C. RYDER far more to the south, on Danmarks Ø (70° 26'), forms, however, an exception to this rule, having one barb on the right side.⁴ In their main features these forms point towards north-west, not southwards towards Angmagsalik.

Judging from the circumstances in which the finds were made, it appears that the differences of type are not dependent on a diffe-



Fig. 10.
1/2.

¹ Cf. SVENANDER, Pl. I, 37—40 and Pl. II, 59—74 for the most typical examples of Type I; Pl. II, 80 approaches very closely to those from N. E. Greenland. For Type II cf. Pl. I, 1—4 and 30. The author draws attention to the fact that Type II is widely distributed all over the west, and regards it as the main type (p. 40).

² KROEBER, p. 279, Figs. 13—15; BESSELS, p. 362, Figs. 3 and 4.

³ Cf. BOAS III, p. 14, Figs. 4, *a—c* and *h*; BOAS I, pp. 489—90; the specimen figured on p. 491, in spite of its greater thickness, should also be included in this type. On the other hand, the now uncommon „*siatko*“, reproduced after PARRY on p. 475, must be referred to the other type. Cf. also TURNER, p. 250, Fig. 68.

⁴ Mus. No. L. b. 730; RYDER I, p. 314, Fig. 13 b.

rence either of time or locality; thus the harpoon heads figured in Pl. XIII, 3—6, all from the same house, include both types. It must be assumed that the two types were used for different purposes; but archæological material alone is not sufficient to solve the question. True, these differences of type prevail at Smith Sound, but then there is at the same time a fairly great difference in the size of the implements, which is not the case in North-east Greenland.

Type III, with the line hole perpendicular to the horizontal plane and a single line groove along the one plane, is represented but sparingly. It implies the use of a single line only, one end of which passes through the hole and is fastened with a knot; the line then follows the line groove on the opposite plane. By this method of fastening, the pull of the line acts exclusively in one direction, and the head is thus apt to be detached before the proper moment. In the above-mentioned specimen from Skærgaards Halvø a very clever remedy has been found for this defect;¹ it has two holes, one below the other, and the line is carried first through the upper hole and then back through the lower one so that it runs along the same plane on which the knot rests; hereby the pull is distributed in both directions.

In West Greenland, harpoon heads of this type with one line are fixed to the ends of the three-pronged salmon fork. Similar specimens have been found on Southampton Island, a locality which, on the whole, is of great interest in its bearing on the present question.

Slate blades of Weapons.

a. Trilateral.

It has been mentioned above that one of the types of harpoon head has usually had a separately-made blade; it was therefore to be expected that the collection would contain such blades. Two of the specimens (Figs. 5 and 6) still have bone blades nailed to them. These are the only bone blades in the collection; of slate blades, on the other hand, there are no less than thirty with the base cut off square. The majority of these should doubtless be regarded as harpoon blades, though some are no doubt intended for lances and arrows; however, since no definite line of demarcation can be drawn between them, it is best to deal with them all here (cf. Pl. XII, 2—15 and Pl. XIV, 1—11).

The blades, which are rather thin, are trilateral in form, the one side shaped, by grinding, into three faces, so that three

¹ THALBITZER I, p. 348; BOAS, III, p. 446, Fig. 248 *l*, *o* and *p*; cf. *k* and *m* from Iglulik.



ridges diverge from a central point and run to the tip and the two basal angles of the blade respectively; on the other side they are flat. The basal line is always straight; the edges are, on the other hand, more or less curved — usually, however, but slightly so. The basal angles are generally somewhat rounded.

It is probable that two of the larger specimens (Pl. XII, 3 and Pl. XIV, 1) are lance blades; the edges are more sharply curved; they are broadest some distance above the basal line; thus the edges converge rather highly towards the base. The largest of them (Pl. XII, 3), from Snenæs, house 406 (L. 3768), is 8.2 cm. long; its greatest breadth, 4.5 cm., occurs 3 cm. from the base, which is only 3 cm. broad. The other, from the spring settlement at Rypefjeldet (L. 4159), is 6.4 cm. in length; its greatest breadth, 3.4 cm., occurs 1.5 cm. from the base; a nail hole is drilled in the line of maximal breadth.

As regards the rest of the blades, their length varies between 2.3 cm. and 7.2 cm., while their breadth varies only between 2 cm. and 3.3 cm. As may be seen, their breadth is fairly constant; thus the longer specimens are more slender than the shorter ones.

The number of these stone blades is very considerable, especially in view of the small number we previously had from these regions. The second German North Pole Expedition brought home two specimens from Mackenzie Inlet (73° 20')¹, and the Danish Expedition under Captain C. RYDER six, viz. one from Cape Stewart (70° 27')² and five from Danmarks Pynt (70° 26')³.

Of all the 38 stone blades of this type from north-east Greenland, only three have nail holes⁴. Even if we assume that the 14 blades found in the small wooden bowl in house 406 near Snenæs (see p. 376) are not quite ready for use, yet it is evident, that as a rule the blades have not been fastened with nails. They have probably been cemented with a substance similar to that used by the Central Eskimo⁵. The harpoon heads also point in this direction, only the two with bone blades having holes for nailing.

As regards the position of the harpoon blade in relation to the line hole, a theory has recently been advanced⁶ to the effect that as long as the blade was of stone it was very valuable, being made of a material often rare, and always requiring great labour in ex-

¹ KOLDEWEY, p. 603, Figs. 7—8. ² RYDER I, p. 315, Fig. 15 b (L. b. 759).

³ L. b. 723, 727 and 728; RYDER I, p. 309, Fig. 8. ⁴ Pl. XII, 9; Pl. XIV, 1 and RYDER I, p. 309, Fig. 8 to the left. In the Museum the last-mentioned has afterwards been completed by being put together with another fragment; it is now 3.4 cm. in length and 2.5 cm. in breadth, with the hole for nailing 1.3 cm. from the basal line. ⁵ BOAS I, pp. 618 and 626. ⁶ PORSILD, pp. 609—611.

ecution; in addition, it was more fragile. Therefore the blade was placed transversely to the line hole, so as to receive the pressure on the edge and not on the face. The iron blade, which stands a greater pressure, could, on the other hand, be turned in the plane of the line hole and receive the pressure on its face.

This theory does not agree with the conditions prevailing in North-east Greenland; as already mentioned, all the harpoon heads with slits had the latter placed in the plane of the line hole, although they can hardly have had iron blades¹.

It is probable that the smallest of the above-mentioned blades, as for instance Pl. XIV, 6—8, were blades of arrowheads, but no definite line of division can be drawn. Thus an examination of the iron blades on the West Greenland harpoon heads in the National Museum² will show that they vary from 2.2 to 6.7 cm. in length, and from 1.9 to 3.4 cm. in breadth; on the other hand, the dimensions of the arrowheads rise as high as 6 cm. in length and 3 in breadth, a size which corresponds broadly with that of a pair of Eskimo stone blades known to have been used in hunting whales and larger seals³.

A preliminary stage is illustrated in Pl. XIV, 12. The slate is only roughly fashioned into the desired shape; the edges are still thick, and the grindjng has not been begun. The specimen, which is 9.8 cm. in length and 5.7 cm. in extreme breadth, was found in tent 485 on the western camping ground near Sælsøen⁴.

b. Slender, leaf-shaped.

There are a few slate blades of different shape, with a slender blade and a short, flat tang tapering at the rear end.

L. 3767, Snænæs, house 406 (Pl. XII, 2); length 11.3 cm., the blade, which is thin, has an extreme breadth of 2.3 cm.; the tang is furnished with a nail hole 2.8 cm. from the butt end.

L. 3469, Renskæret, house 132 (Pl. XIV, 16); length 9 cm.; the blade, which is thicker than the preceding one, is 2.4 cm. in extreme breadth; the tang, which is 1.2 cm. broad, has at the edges near the rear end two pairs of notches for lashing.

¹ In the National Museum in Copenhagen are four harpoon heads with stone blades from West Greenland; all of them have the blades placed in like manner in the plane of the line hole.

² Those in which the stone blade still remains fixed in the slit are too few to enable us to draw any conclusions from them.

³ One was found in 1699 on the coast of Greenland in a whale (JOH. ANDERSON, p. 294, cf. Fig. at p. 286); another in the National Museum in Copenhagen (Mus. No. 21) was in 1793 cut out of a bearded seal (*erignathus barbatus*) at Egedesminde; it is 6 cm. in length and 4 cm. in breadth.

⁴ THOSTRUP, pp. 295 et seq.



L. 4135, Rypefjeldet, spring settlement, tent 609 (Pl. XIV, 15). Like the preceding, but without notches; the fore end wanting; present length 8.1 cm.; extreme breadth of blade 2.1 cm.; tang 1.2 cm. in breadth.

These slate blades, both in form and mode of attachment to the shaft, are closely related to the bone heads described on p. 362 as arrowheads. Nor is the breadth of the tang greater than in these. The reason why I nevertheless cannot regard these specimens as arrowheads is that one of them, that found on Snenæs, is furnished with a nail hole. This method of attachment between head and shaft is unknown in arrows. Judging from the finds, no bone foreshaft had been inserted. The small group, peculiar to North-east Greenland, which has been further supplemented by a specimen from the NATHORST Expedition¹ must be left for future consideration, when further finds may possibly bring shafted specimens to light.

Loose shafts and Foreshafts of Weapons.

As is well-known, kayak-harpoons for throwing are furnished with a loose shaft which is connected to the shaft itself by means of a movable joint; this is absent in ice-hunting harpoons, used for thrusting when hunting seals at breathing holes. In these, only the harpoon head can be detached, while the bone piece between the head and the shaft is spliced to the latter and is thus transformed from a loose shaft into a foreshaft. It is then of course superfluous: and we also find, at Angmagsalik, the harpoon head placed directly on the pointed fore end of the shaft².

In North-east Greenland, on the other hand, these bone pieces belonging to ice-hunting harpoons are found, and are represented in the collections by several specimens, of very unequal size.

L. 3103, Eskimonæsset (Pl. X, 5). A 42.6 cm. long piece, circular in section, of a narwhal tusk, 2.9 cm. thick at the base and tapering towards the rounded tip upon which the harpoon head is placed. At the butt end it has a bevelled plane, 10 cm. long, for application to the shaft.

L. 3120, Thomas Thomsens Næs (Pl. XV, 5). Similar to the above, but shorter and somewhat damaged at both ends. Length 22.7 cm.; extreme thickness 2 cm. The bevelled plane is now only 3 cm., but was probably originally 5 cm. long.

L. 3187, Syttenkilometernæsset (Pl. XX, 9); length 42 cm., extreme thickness 2 cm. Very similar to L. 3103, but the oblique splice 9.6 cm. long has a notch half way down which must have fitted on to a corresponding notch on the shaft, to prevent the planes from slipping away from each other during the thrust.

The specimens in question are all circular in section, and the oblique splices terminate in a fine edge at the butt end. Herein

¹ SOLBERG, Pl. 9, 8.

HOLM, Pl. XV, Fig. 2 from the right; THALBITZER II, p. 420, Fig. 116.

they differ from the following specimens, the edges of which are more or less thick; they have been fastened to one side of the shaft, which in this case has had a notch, affording a plane for application to the butt end of the bone piece, and to prevent it from slipping¹.

L. 3187, Syttenkilometernæsset (Pl. XV, 6); length 25 cm. It is made of the side of a narwhal tusk, so that the butt end, in transverse section, is almost rectangular, being 2×1.2 cm. True, it terminates thinly like the above mentioned specimens, but the butt end, which in the preceding specimens sloped to a fine edge, consists in this case of a plane about 5 mm. thick for application to the shaft.

L. 4027, the winter settlement at Rypefjeldet (Pl. XV, 3). Made of antler. It is circular in transverse section along the greater part of its length its extreme thickness is 1.8 cm.; it tapers towards the tip, where it ends conically. But 8 cm from the butt end it widens abruptly, and becomes rectangular in section; this part is 2.4 cm. broad at the front, but narrows posteriorly to 1.4 cm. In this part the plane which was applied to the shaft is smooth, while the three other planes are roughened to increase the security of the lashing².

The larger pieces of bone are rather markedly curved. It is possible that, as among the Central Eskimo, they have been curved intentionally to facilitate the detachment of the harpoon head³; but at any rate the curvature has doubtless increased in course of time, owing to their lying exposed to the influence of the weather.

The National Museum already contained two specimens of this kind from Cape Tobin⁴. A third specimen is in the Museum für Völkerkunde, Berlin⁵. All three are circular in section and rather short, with a bevel at the butt end, in front of which there is a hole, probably for the reception of the fore end of a thong which ran down along a part of the shaft, as is customary at Smith Sound; between this thong and the shaft the harpoon line is tucked to keep it tight⁶.

It would be natural in this connection to describe the fragment, of narwhal tusk, illustrated in Pl. XVI, 2, (L. 3561, from Renskæret, house 134). It has a bevelled plane, 9 cm. long, at the butt end; in this case, how-

¹ This mode of attachment to the shaft is seen in an ice-hunting harpoon from Smith Sound, in the National Museum at Copenhagen.

² L. 4033, from the same place as the latter, may perhaps also be regarded as a loose shaft of an ice-hunting harpoon. It is made of a narwhal tusk; length 14.3 cm.; as, however, it is broken off at the butt end, its use cannot be absolutely determined.

³ Boas I, p. 471.

⁴ Thalbitzer I, p. 371, Fig. 9,

⁵ Museum für Völkerkunde, Berlin, No. IV A 208; it is 11.3 cm. long.

⁶ Cf. Koldewey, p. 603, Fig. 9.



ever, the shaft has not been bevelled and lashed to the surface of the bone piece, but inserted in the natural hollow of the tooth, where fragments of wood are still visible. The fore end is missing; broken off, probably for some considerable length; just above the bevelled surface the thickness is 2.9—3.4 cm.

Here we evidently have before us one of the harpoons, known through older descriptions, in which the bone-piece constitutes the greater part of the weapon¹. A splendid example of this type² was brought home by the second German North Pole Expedition from Little Pendulum Island.

The loose shaft of harpoons for use in kayaks is represented by the following specimens:

L. 3432, Renskæret, house 131 (Pl. XV, 2). Of antler; length 27.5 cm.; nearly rectangular in transverse section; 8.5 cm. from the butt end a line hole has been bored through the broad sides. The broadest part (2.7 × 1.7 cm.) occurs immediately in front of this; from here it tapers gradually towards the apex, which is truncated, and towards the butt end, which terminates in a conical tap, 3 cm. long.

L. 3481, Renskæret, house 132 (Pl. XV, 4). A fragment, 5.4 cm. in length, of a specimen similar to the preceding. It is broken off at the line hole, which is situated 4.2 cm. from the butt end and immediately in front of the conical termination; at the posterior margin of the line hole is seen a line groove, extending backward.

The lance, with movable joint between the loose shaft and the shaft, but with a fixed blade, is represented only by one specimen, and this has even been subject to alteration at a later date.

L. 3117 a, Thomas Thomsens Næs, near tent 48 (Pl. XV, 1). Length 24 cm.; rounded rhomboid in transverse section. The maximum circumference occurs 3 cm. from the butt, where it is 3.2 cm. broad and 2 cm. thick. From here it narrows abruptly to a conical tang; in the other direction it tapers gradually without losing much in thickness. The tip, for a distance of 3.5 cm., has been pointed by means of a few rough cuts; this is evidently a later alternation made after the tip had broken off; at the extreme point are seen traces of the posterior portion of the blade slit. Two line holes, 2 cm. apart, have been bored obliquely through the broad faces, parallel to each other in the middle line; the anterior hole is at a distance of about 8 cm. from the butt end. On that face where the openings of the holes are furthest from the butt end, short line grooves extend backwards from both openings.

¹ Cf. Ross, Plate opposite p. 102.

² Museum für Völkerkunde, Berlin, No. IV A 190; cf. KOLDEWEY, p. 603, Fig. 10. It is 89.5 cm. long and has in 3 places in its rear part holes for the reception of the thong.

As is well-known, in the modern Greenland harpoon and lance the movable joint between the loose shaft and the shaft is not conical in shape; it is framed by two flat surfaces, furnished respectively with only a small projection and socket which fit into each other¹. The same type of joint is seen in two West Greenland winged harpoons in the National Museum at Copenhagen dating from the middle of the 18th century. On the other hand, the conical joint occurs on the smaller missile weapon, the bladder dart, both in its older form with the long massive bone head² and in its later form with an iron head³. A short, slender lance with conical joint is found in the National Museum, but there is no complete harpoon of this construction.

The conical joint is a feature of the original Eskimoharpoon, and occurs over almost the whole of the Eskimo region, as also among the Indians in Oregon and in California⁴; the pointing of the butt end of the loose shaft for application to the shaft was a natural mode of attachment, but more difficult to disconnect. The improved type, formed by reducing the tang to a small central projection on a flat surface, exists in both the extreme points of the Eskimo region, viz. Greenland and Bering Strait.⁵

Two specimens of foreshaft for such weapons have been found by the Danmark Expedition:

L 3106, Eskimonæsset (Pl. X, 4). Length 24 cm. In the anterior extremity, which is 2·8—3·2 thick, there is a conical hollow. A line hole is drilled 9 cm. from the front end, and immediately behind it the specimen is cut off obliquely to form a splice, about 13·5 cm. long. The inner surface of the splice is smooth, while the outer surface of this portion has been roughened. The specimen is 2·5—2·7 cm. thick at the line hole.

L 3185, Syttenkilometernæsset (Pl. XVI, 1). Of narwhal tusk, Length 13·5 cm.; thickness 2·7 cm. The line hole is situated only 2·5 cm. behind the anterior extremity; the bevel for the splice begins immediately behind it. The natural hollow of the tooth extends through the entire length of the specimen, and has served to receive the projection of the loose shaft.

So far as may be judged from the material hitherto available, the point of contact of the two types of harpoon and lance falls in the districts around Scoresby Sound. The older type, with conical joint connection, is met with as far south as Danmarks Ø (70° 26')⁶ and Dunholm (69° 54')⁷. Of the newer type with squared surface

¹ MASON I, Pl. IV and p. 256. ² SVENANDER, Pl. 4. ³ FABRICIUS I, pp. 159 et seqq., the Plate, Fig. 8. ⁴ Cf. MASON I. ⁵ MASON I, p. 208 and Pl. 10. ⁶ RYDER I, p. 313, Fig. 12 b (L. b. 721). ⁷ THALBITZER I, Pl. XVI, 12—13 (L. 4511 and L. 4500) and p. 444, Fig. 45 (L. 4507—09).

and projection we have specimens from Cape Stewart ($70^{\circ} 27'$)¹ and from Danmarks Ø;² also of unknown origin, a foreshaft from the German Expedition³ and a loose shaft from the NATHORST Expedition.⁴ The specimen from the level country west of Hvalros-odden ($76^{\circ} 56'$ N. lat.) which was afterwards turned into a sledge-buckle (illustrated in this paper as Fig. 24) must undoubtedly be regarded as an isolated instance of the occurrence of this new type far to the north. All the specimens, the origin of which is known for certain should, however, be most properly regarded as transitional forms, the projection being fairly large and the surface fairly small.

Shafts for Weapons.

As regards the shafts for the larger weapons the finds give us but scanty information. Among the many wooden pieces brought home there are only three characteristic fragments of shafts for harpoon or lance, all from Syttenkilometernæsset.

L. 3221 (Pl. XVII, 1) is 18.7 cm. long. The diagonal splice, which extends over the entire length, is furnished with a notch; at the thin end another notch is seen on the outside — to the left of the figure — which is intended to prevent the lashing from slipping. Three nail holes are seen between the two notches; in two of them wooden nails still remain fixed; at the other and broken end of the specimen a third peg is seen. The shaft has been elliptical in transverse section; the breadth is 2.8, and the thickness has probably been about 4.5 cm.

L. 3222 is 36 cm. long. The wood is much weathered, so that the knots project. Bevelled surfaces extend from both ends to about the middle, where the thickness is less than it was originally; the breadth is 2.8 cm. The splices are not furnished with nail holes.

The third fragment (L. 3223, Pl. XVII, 2) is 23.3 cm. in length. The splice, which extends almost through the entire length has five nail holes, two of them with wooden nails still in place. Breadth 3.2—3.6 cm.; thickness 2.3 cm.

However scanty this material may be, it is nevertheless not entirely devoid of importance, being hitherto the only material which can give us information regarding the dimensions of the lar-

¹ Mus. No. L. b. 747 (RYDER I, p. 313, Fig. 12 a) and L. b. 749, both for harpoons; loc. cit. p. 314, Fig. 13 d (L. b. 748) for lance, and p. 315, Figs. a and e (L. b. 763 and 792) for lance. The author has not noticed that a and e are really fragments of one loose shaft with a total length of 44 cm; it has been broken during use, and lashed together. ² L. b. 726. ³ KOLDEWEY p. 604, Fig. 17. ⁴ STOLPE, Pl. IV, Fig. 14 to the left.

ger shaft for weapons. Even if the latter do not attain the dimensions of the weapons of the district further south as regards diameter, yet they are in no wise slender; moreover, their joints and finish show much care and accuracy.

Finger Rests for Weapon Shafts.

In weapons where the throwing board is not used, a bone peg is placed on the shaft at the point where it is grasped by the hand, to serve as a support during the throw.

In the colonized part of Greenland these pegs are now mortised into the wood, but at Smith Sound they are usually lashed to it.¹ This is also the case with the three specimens found in the collection of the Danmark Expedition. In shape they resemble an oblique pyramid with flat base, applied to the shaft so that the apex inclines towards the butt end; they are provided with 1—2 holes for lashing on to the shaft.



Fig. 11. $\frac{2}{3}$.

L. 4029, Rypefjeldet (Fig. 13 a). Base 1.6×1.3 cm.; height 2.7 cm., reckoned at right angles to the base. One hole.

L. 4028, Rypefjeldet (Fig. 13 b). Base 2.4×1.6 cm.; height 3.1 cm. Two holes.

L. 3493, Renskæret, house 132 (Fig. 13 c). Of antler; narrow. Base 2.9×1.1 cm.; height 3.8 cm. Two holes.

In the National Museum in Copenhagen there are some specimens of such hand rests from the northern part of colonized West Greenland down to Disco Bay.

Among the Central Eskimo the lashed finger rests are of a different shape²; from the West Eskimo, on the other hand, there are forms similar to those described above³ together with the Central Eskimo type. Above (p. 376) it has been suggested that the bear illustrated in Fig. 2 a should probably be regarded as a particularly fine specimen of this kind.

¹ KROEBER Pl. XI, 1—2.

² BOAS III, p. 17, Fig. 11. The attachments for lines figured in the same place in Fig. 10 are certainly more like our specimens, but the author mentions particularly that here the base is concave; moreover, the fact that his specimens a and c are grooved for thongs shows that they must, unlike the items from our collection, have been fastened to a very narrow object.

³ NELSON, Pl. LVII b, 27 and 28 and 31 and 32. Cf. MASON I, Plates 8 and 9.

Ice Picks.

To the butt end of the shaft of the ice-hunting harpoon a pointed piece of bone is lashed; it is used for enlarging the hole in the ice when the seal is struck with the harpoon and has to be hauled up.

Of such ice picks the present collection contains only one specimen, L. 3557, from Renskæret, house 134 (Pl. XVI, 3). It is made of antler, semicircular in transverse section. At the butt end, for a distance of 6.5 cm., the ice pick has been pointed by paring away the sides, so that here it is trapezoid in transverse section; this part is intended for lashing to the shaft. Immediately below it is a hole with grooves running forward for the reception of a line which should further secure the connection between the ice pick and the shaft. The apex is broken off, the present length is 19.5 cm.; breadth 3.3.

There exists one more specimen of this implement from North-east Greenland, brought home by KOLDEWEY¹. From Angmagsalik ice picks of bone are known, although there iron specimens are in the majority. In the colonized part of West Greenland, bone ice-picks have long since been replaced by European steel chisels, but the National Museum in Copenhagen contains some 10 older specimens of bone, all from the regions north of 68°.

Sealing Stool.

In hunting on the ice, when the hunter is obliged to wait for hours at the breathing hole of a seal, he always takes a wooden stool with him.

The collection contains an unusually large and well-made specimen of these sealing stools, found on the east shore of Stormbugt, in the ruins of a tent (Fig. 12)². The seat, which is semicircular in form, is deeply hollowed, maximum depth being 15 cm., so that it affords a comfortable rest. It was damaged while in use; the part of the seat which now remains has been broken and lashed together in six places, the holes and grooves made in the process of mending are still visible; the back part of the existing piece has in a similar manner been lashed in four places to the edge now missing. Moreover, two nails have been driven into the middle of the front edge to secure a splinter that had been split off. All this shows that considerable trouble has been taken to repair this stool, the manufacture of which had required a large

¹ Mus. f. Völkerkunde, Berlin, IV A 198. 25 cm. in length, of this the diagonal splice constitutes 9 cm.; as in the specimen mentioned above, the line hole is situated immediately behind the splice.

² Mus. No. L. 3715.

block of wood and much time, and which would therefore be of great value.

The hollowed seat itself is 50 cm. in length, 34 cm. in present width (was originally 37—40 cm.) and 2 cm. in thickness. In the front it has a projection on either side, about 10 cm. long, about 6 cm. wide and 5.5 cm. thick, into which the fore legs have been inserted; including these the entire length of the front edge is 71.5 cm. There has no doubt been a similar projection for the reception of the back leg.

At the front edge, on either side and about 7 cm. from the edge of the seat, is drilled a vertical hole with grooves directed towards the edge. Similar holes are seen in a seat in the Christiania Museum¹.

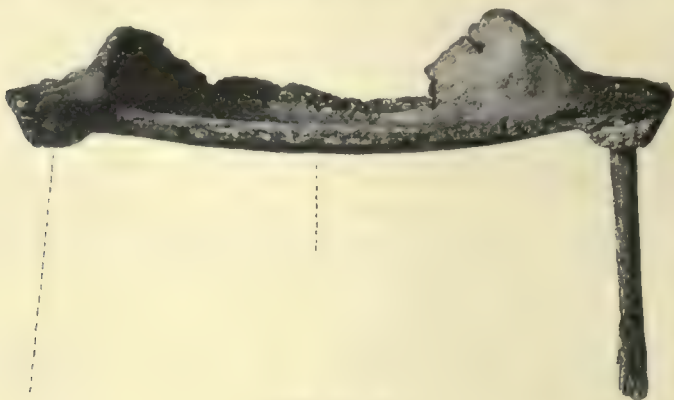


Fig. 12. $\frac{1}{8}$.

In both projections, also, are seen 2 pairs of holes running from the upper side outwards to the lateral edges and connected in pairs by a groove. The reason for these holes will be discussed below.

The height of the stool was 34 cm.; only one leg now remains; it terminates at the upper end in a conical tap which has been inserted into the projection of the seat. The other part of the leg is rounded in form, thickest (3.2—3.3 cm.) at the ends and lessening gradually in diameter towards the middle, where it is about 2.5 cm. thick. 1—1.5 cm. above the bottom edge a groove encircles the leg, and 4 cm. below the seat a hole is drilled transversely through it.

The groove below has no doubt served for fastening a piece of skin under the leg to prevent its creaking and thereby attracting the attention of the seal; it has probably also served to connect the legs with one another. The holes at the front edge of the seat, in the lateral projections and in the upper part of the leg, were doubtless likewise intended for the insertion of lashings connecting the

¹ No. 12398, found by the SVERDRUP Expedition in Axel Heibergs Land.

seat and the legs. This precautionary measure, which is unnecessary in the case of the low stools, is of importance as regards the higher specimens, and becomes a necessity when the frame is slender, as is the case at Smith Sound¹.

This stool is unique both as regards size and form. The hollowed seat indicates that it was evidently intended to sit on, while the others found in North-east Greenland appear to be low stools to stand on: the stools from Cape Tobin², two stool-legs in the Christiania Museum and one leg brought home by the RYDER Expedition from Danmarks Ø have a height of only 10—13 cm. The seats found by the NATHORST Expedition³ belong to the same type, as also the seats from Grinnell Land⁴ and Heibergs Land⁵. From Smith Sound, BESSELS⁶ figures a similar low stool; on the other hand, the high, slender stools now used differ greatly from those of North-east Greenland. At Angmagsalik and at Point Barrow the stools are, it is true, of a similar form, but considerably higher. In the former place they are used both to sit on and to squat on with the feet upon the seat.⁷

The one-legged stool with footstool used in West Greenland is a local form⁸. The footstool is probably allied to the North-east Greenland type; the stool, I am inclined to believe, is a product of European influence; the squatting position is a position of rest so natural to primitive people that they would hardly make such an alteration on their own accord, especially as it would result in two implements out of one.

The sealing stool from the east shore of Stormbugt is likewise so low that the man when sitting on it is practically in a squatting position. For this reason, the seat slopes downwards from front to back and is deepest at the back edge.

Prongs for Bird dart and Fish spear.

Strangely enough, among the finds from North-east Greenland there is not a single object which can with certainty be identified as a point for a bird dart, either of the thick bone pattern as used in West Greenland before the iron point was intro-

¹ Cf. KROEBER, p. 269, Fig. 1. ² THALBITZER I, pp. 427—435. ³ NATHORST, pp. 346—347. ⁴ BOAS III, p. 463, Fig. 265. ⁵ THALBITZER, loc. cit. ⁶ BESSELS, p. 359, Fig. 1. ⁷ MURDOCH I, p. 255.

⁸ HANS EGEDE, Plate opposite p. 59. The height of two foot-stools of this kind in the National Museum is 11 and 14 cm. The seats are 33·5 × 23 cm. and 41·3 × 16·7 cm. respectively. The seat of the corresponding one-legged stools consists of quite a narrow and somewhat curved piece of wood with rounded ends, 28 cm. long and 5·5—6 cm. broad. The height of the one is 54·5 cm.; at the bottom it is furnished with an iron spike; the other is defective.

duced¹, or of the thin slender kind found at Angmagsalik², which is evidently modelled on the iron point. The object described by W. THALBITZER³ as being possibly a point for a bird dart is the point of an arrow⁴.



Fig. 13. $\frac{1}{2}$.

The presence of the bird dart in North-east Greenland is thus proved only by the discovery of the prongs of the shaft. They have previously been found by KOLDEWEY, RYDER and AMDRUP⁵; three specimens in all. They differ from the type otherwise known from Greenland by having, in addition to the barbs directed inwards towards the shaft, a barb directed outward at the extreme tip⁶; they are also larger and stronger.

Of the same powerful form is the specimen illustrated in Fig. 13 (L. 3322) from Maroussia, house 141, but it has, as customary in Greenland, all its barbs directed inwards. It is furnished with three barbs, increasing in size towards the base; they have been made by drilling; this is still shown by traces of holes found at the inner angles. The specimen is defective at the hinder end; present length 13.8 cm. Near the present base is a notch at the outer edge which has served for lashing on to the shaft.⁷

Fig. 14 (L. 3653) from the east shore of Stormbugt, is a slenderly formed object which has probably belonged to a bird dart used as a toy. It is biconvex in section, sharply curved and without barbs. At the base, the inner edge is bevelled for application to the shaft. About 4 cm. from the base is a hole for lashing. It is 12.3 cm. long.

Fig. 15 (L. 4023) from Rypefjeldet is probably a prong belonging to a salmon spear; it differs from the prong for a bird dart *inter alia* by its thick outer edge. The specimen is defective at the tip, where one inwardly turned barb is seen. It is nearly rectangular in section, the inner edge, how-



Fig. 14.
 $\frac{1}{2}$.

¹ SVENANDER, Pl. 5, 169; cf. SOLBERG, p. 68.

² HOLM I, Pl. XIV; THALBITZER II, p. 435, Fig. 137.

³ THALBITZER I, pp. 366 et seq.

⁴ Cf. Meddelelser om Grønland, vol. LIII p. 420.

⁵ KOLDEWEY, p. 605, Fig. 18; RYDER I, p. 316, Fig. 16; THALBITZER p. 372, Fig. 16.

⁶ Prongs with outward directed barbs are known from the Eskimo about Bering Strait; cf. NELSON p. 150, Fig. 42 c.

⁷ Here belong probably also the objects, Mus. No. L. 3843 from Snenæs, house 407 and Mus. No. L. 4154 from the spring settlement at Rypefjeldet, tent 618, the latter for a toy dart; they are 14.9 and 5.9 cm. respectively. Both of them are, however, so weathered that it is impossible to identify them more exactly.



ever, is rounded. It tapers towards the base where the inner edge is bevelled for application to the shaft. 7 cm. from the base is a notch at the outer edge for a lashing. Present length 15.3 cm.

The following prongs belong to fish spears:

L. 3696, from the camping ground on the east shore of Stormbugt. A quite thin and flat point of bone with two (doubtless originally three) barbs along one edge. Somewhat weathered and broken off at the hinder extremity. Extreme breadth 1.4 cm., present length 11.3 cm. It recalls the prongs of the sea-scorpion spears used at Angmagsalik.¹

L. 4184, from the spring settlement at Rypefjeldet (Fig. 16). An outer prong, length 12.3 cm., extreme breadth 1.3 cm., and 1 cm. thick, elliptical in section, with a small inwardly turned barb at the tip. At the hinder end, the edge which faced the shaft has been bevelled for application to the same.



Fig. 15. $\frac{1}{2}$.

The prongs for fish spears illustrated on Pl. XVII, 3—4 were found on Syttenkilometernæsset, Fig. 4 in tent 78, Fig. 3 among the objects found scattered about the settlement. They are peculiar in that they are made of wood, and so far as I know, they are the only prongs hitherto found made of this material; it may therefore be justifiable to regard the two finds, each as a complete set, even if the prongs are not exactly alike. The material and the slender structure render it probable that they were made for a child.



Fig. 16.
 $\frac{1}{3}$.

L. 3215—17 (Pl. XVII, 3). The outer prong to the right on the plate is complete, 15 cm. long, with an inwardly directed barb and a plane, 6 cm. long, for application to the shaft. In front of this plane the breadth of the prong is 8 mm. and the thickness 9 mm. The outer prong to the left is now 14.9 cm. long, but its tip with the barb is missing; the surface for application to the shaft is 8 cm. long; at the front end of the latter the breadth and thickness are 9 mm. This prong differs from the former in having a notch at its outer edge, immediately above the joining surface to receive the lashing. The central prong is 11.3 cm. long; the part which has been inserted into the shaft is rectangular in transverse section and tapers gradually towards the hinder extremity, now broken off; the point is slender, conical, and furnished on both sides with a barb; the two barbs are not equal in size.

L. 3151—53 (Pl. XVII, 4) is more slender than the previous set. One of the outer prongs (the one to the left on the plate) is 14.2 cm. long, the joining surface 7 cm.; at its fore end, the breadth is 5 mm. and the thickness 8 mm.; the other side prong is 13 cm. long and has a tapering splice, 6.5 cm. long, at the fore end of which the breadth is 6 mm. and the thickness 5 mm.; both specimens have a small inwardly directed barb. Of the middle prong, only the front part for a length of 6.7 cm. is

¹ HOLM I. Pl. XV e; THALBITZER II, p. 435, Fig. 140.

preserved; it is quite flat, only 2 mm. thick, and has an extreme breadth of 6 mm.; like the one of the preceding set it has barbs, of unequal length, on either side.

The bone piece illustrated in Fig. 17, from house 144 on Maroussia, is the only one of its kind from North-east Greenland. It should be compared with some specimens from the districts around Southampton Island, which BOAS undoubtedly rightly described as barbs of side prongs of a salmon spear.¹ It is true, the barb from Maroussia is somewhat larger than those figured by BOAS, but it has all the features characteristic of the barbs in question.



Fig. 17.
1/2.

L. 3363. Length 9.3 cm., extreme breadth 2.2 cm., made of antler. It is very flat, and the convex edge is almost sharp, the concave rather more rounded. In front it has a projection which has rested against the end of the prong; behind the barb there is a plane surface 2.5 cm. long, which has been applied to the inner side of the prong, and two holes for lashing it thereto.

Similar barbs are also known from among the West Eskimo.²

This series of barbs may be concluded by the specimen illustrated in Pl. XVI, 4 (L. 3551), from Renskæret, house 134 which must presumably be regarded as the roughly shaped prong of a bird dart. Its length is 19.4 cm. The outer edge, with the exception of a small incurvation 4.5 cm. from the butt end, is rather evenly curved. The maximum breadth, 2.9 cm., occurs 7 cm. from the butt end; from there the specimen gradually diminishes in breadth towards both ends, in a somewhat concave line. A little in front of the broadest part a perforation has been begun, and another on the reverse surface 1.5 cm. from the butt end.

On comparing this specimen with the prong found near Cape Tobin³, we find not only the two holes which have been commenced in our specimen, but also a notch at the outer edge corresponding to the incurvation in the unfinished specimen from Renskæret. Our specimen is but roughly-hewn, the edges are not shaped and there are no barbs; only the position of the holes and notch for attachment to the shaft have been indicated to serve as a guidance during work.

¹ BOAS III, p. 391, Fig. 185, especially *a* and *b*; compare the prongs corresponding to them (Fig. 184).

² Cf. NELSON, Pl. LXVII, 5; cf. p. 150, Fig. 42, 1.

³ THALBITZER I, p. 373, Fig. 16.

Weapons and Implements for hunting on Land.

The wooden Bow and Implements for twisting the Backing.

The Eskimo bow stave has two main forms; it is either straight or has its ends bent up like the Tatar bow. Both forms often occur in the same regions.¹

In finds from West Greenland the straight form is most common.² According to the eleven bow staves in the National Museum at Copenhagen, it may be described as a rather flat bow with usually only a slightly rounded belly; the thickness gradually increases towards the grip; the breadth does not vary greatly; the grip, it is true, is narrower, and the limbs taper towards the end, their extreme part, however, often widening again. None of the specimens preserved have the end-pieces of bone mentioned by FABRICIUS. The bow varies greatly in length, which is usually considerable. Of nine bows for adults³, five are from 1.41 to 1.47 metres long; three smaller specimens are 1.21, 1.29 and 1.35 metres respectively; the largest attains the considerable length of 1.59 metres. It has had a backing of cords or sinew; at the point where the shorter strands have been carried round the bow stave, the width of the latter diminishes abruptly, which prevents the strands from slipping inwards towards the middle; this point occurs, according to the length of the bow, 21—39 cm. from the end.

The "Tatar" form of the bow is, however, also represented, although by only three specimens, viz. two bow staves from Disco Island and one bow with the backing of cords and sinew preserved⁴. The exact origin of the latter is unknown; it was found

¹ MURDOCH II; BOAS I, pp. 502 et seq.; MASON II. Since this was written has been issued "The Greenland Bow" by KAJ BIRKET-SMITH (Medd om Grøn. vol. LVI).

² FABRICIUS II, pp. 235 et seq. The same form is seen in two paintings in the Museum, from 1654 and 1724 respectively (cf. BAHNSEN, vol. I, p. 232).

³ One which is only 98 cm. must be regarded as a child's bow.

⁴ BIRKET-SMITH II, p. 15, Fig. 2 a.

in the Royal Museum (Det kongelige Kunstkammer) in 1737 labeled: "Greenlandic". The same form of bow is indicated in an illustration in JOHANN ANDERSEN.¹ As this is the form of bow stave we meet in North-east Greenland, its main form will be described here on the basis of the West Greenland material, in order that we may gain a better understanding of the fragments found by the Danmark Expedition. The backing need not be taken into consideration, as it is wanting in all the specimens to be described in the following.

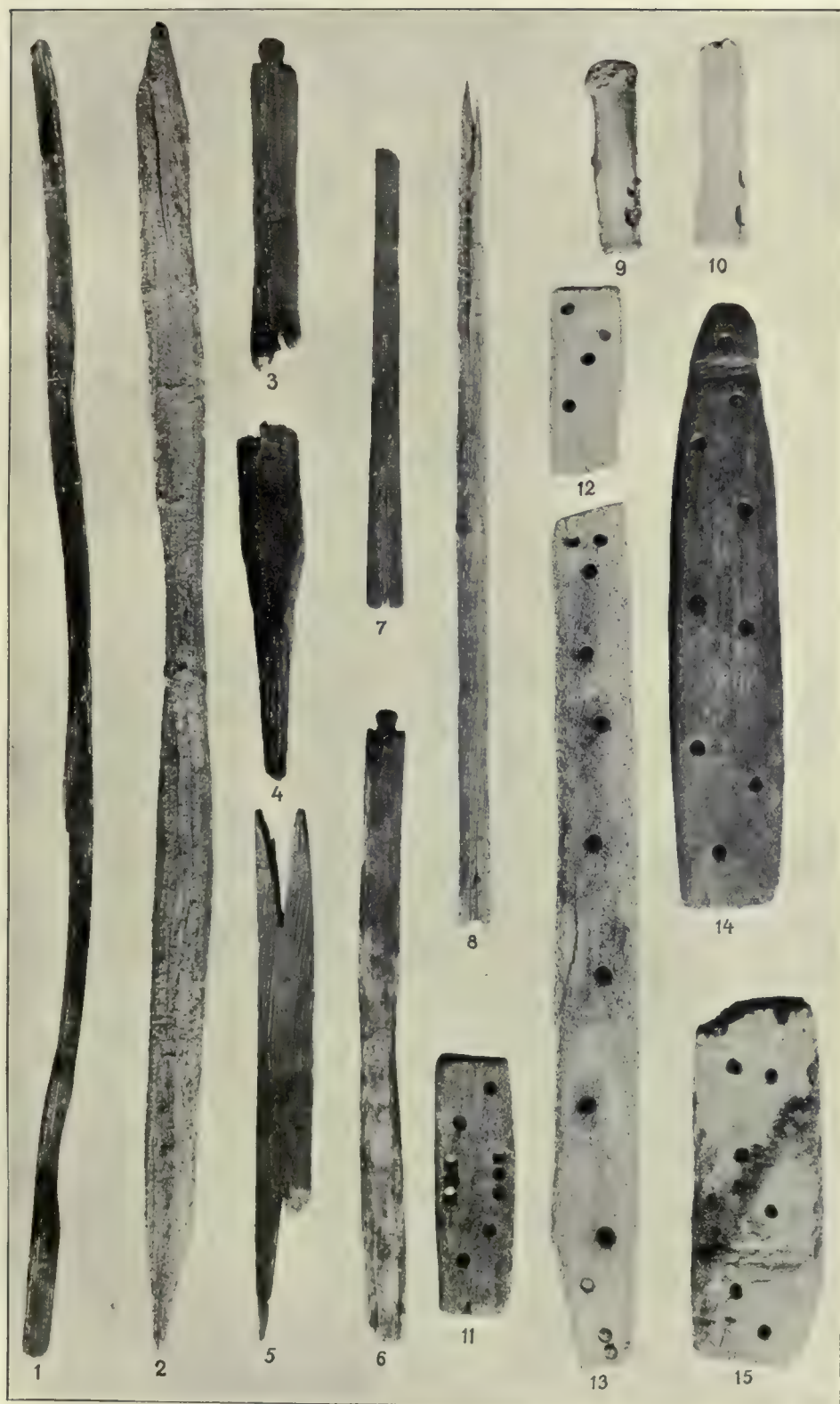
The "Tatar" bow is shorter than the straight variety, being 1.12—1.34 metres long. The length is 2.06—2.14 times the distances between the middle of the bends². The extreme breadth occurs immediately within the bend and decreases thence both towards the ends and towards the grip. It is thickest at the grip; in two cases it is somewhat less thick within the bends than towards the ends. The only complete specimen of the three bows has at the bends a curved piece of bone inserted between the bow stave and the backing; at the grip a piece of whalebone is inserted in a corresponding manner. Two of the bows are in one piece, while one of the staves from Disco is composed of three pieces which have been mortised together in a manner similar to that described below in the case of the North-east Greenland specimens. The straight-formed West Greenland bows in the Museum are made of one piece, with the exception of one in which the two pieces have been joined together not by a mortice, but by means of a bevelled splice. It is, however, of slight importance whether the bow is made of one or several pieces, this being dependent on the greater or less supply of wood.

In the following table are given the chief measurements of the West Greenland bows of this form and of the fragments of North-east Greenland bow staves found by the Danmark and the Ryder Expeditions. As to the bow stave L. c. 1424, C. RYDER³ is undoubtedly wrong in regarding the small notch at the back as intended for a splice; the specimen does not decrease in thickness towards the fracture; I am inclined to believe that the bow has been in one piece, and that the notch was intended for a piece of whalebone similar to that found on the old West Greenland bow.

¹ ANDERSEN, the plate opposite p. 286. C. RYDER (I, p. 307) drew attention to the two bow-forms from Greenland; but the material in the Museum has increased somewhat since then; at that time there existed only one bent bow.

² I. e. the points at either end where the bow is bent up, as in bows of "Tatar" shape.

³ RYDER I, p. 307.



	Length			Breadth			Thickness		
	of the entire bow	of the fragment	between the bends	at the ends	within the bends	at the grip	at the ends	within the bends	at the grip
	cm.	cm.	cm.	cm.	cm.	cm.	cm.	cm.	cm.
West Greenland									
L. b. 1 Origin unknown	134		65	3	3·5	2·7	1·3	1·1	1·6
L. 4568 } Disco Island	117		55	2·6	3·2	2·4	1·2	1·4	1·6
L. 4569 }	112		54	2·5	3·2	2·6	1·3	1·0	1·6
North-east Greenland									
Danmark Expedition RYDER	L. 3660 { East shore of	[88—91]	76·3	43	2·5	1·8	1·2—1·4	1·0	1·5
	L. 3661 { Stormbugt		30·7		3·3		1·4	1·6	
	L. 3862 { Snenæs, near	[103—106]	78	50	3	2·2	1·5	1·1	1·8
	L. 4058 { houses 406—407								
	L. 4059 { Rypeffjeldet,								
	L. 4059 { around houses		19·5	2·8			1·1		
	L. 4059 { 521—524		38		2·7			1·9	
	L. c. 1424	[150]	94	3·1	3·6	2·5	2·7	1·7	1·5

The figures enclosed in square brackets indicate the conjectured entire length of the bow calculated according to the distance between the bends; as regards L. c. 1424 between the grip and the bend of the bow.

In Pl. XVIII, 2, Mus. No. L. 3862 is shown from the belly. The constriction at the grip is seen, and the pointing of the ends for the lengthening of the bow. On the back, which is not seen in the figure, a shallow, curved hollow, 10 cm. long, has been made along the bends, undoubtedly to receive a piece of bone similar to that found on the old West-Greenland bow L. b. 1.

In Pl. XVIII, 1, Mus. No. L. 3660 is seen in side view. To the right, i. e. on the back side of the stave, are two hollows corresponding to those mentioned above; at the belly is seen the enlargement which forms the grip. The ends are pointed as in the preceding specimen for insertion into the end-pieces, which must consequently have been furnished with slots.

In Pl. XVIII, 3—5 are represented Mus. Nos. L. 4058, 3564 and 3661 respectively. The first is an end-piece of a narrow, slender bow, but which nevertheless probably is a genuine weapon; the lower end of the figure shows the fracture. The other, which is 21 cm. long, 3·8 cm. broad and 1·7—2·2 cm. thick is broken off at the upper end, in the figure; there are two holes at the fracture, indicating that it has been broken while actually in use and strengthened with lashings; the lower end, in the

figure, is pointed for lengthening. The third specimen has a split at each end, but it is evidently not the part which constitutes the grip; this bow must thus have consisted of more than three pieces; at the inner angles of the splits there is a hole evidently drilled to prevent the wood from splitting during the cutting of the slit.

In Pl. XVIII, 6 is figured a fragment, 36.8 cm. long, the end of a narrow and slender bow (L. 3244), found on Syttenkilometer-næssel. It is 2.3 cm. broad at the point, tapering to 2.1 cm. at the bend, which is situated 20 cm. farther up; from there it again increases in breadth to 2.6 cm. At the end the thickness is 1.1 cm. and within the bend 1 cm. It is undoubtedly a child's bow and therefore not included in the table on p. 401.

Mus. No. L. 3662, from the same locality as L. 3660—61, is the end of a bow, 32.6 cm. long; it appears to have terminated in a slit, but the fragment has no longer its full breadth; it is 1.5 cm. thick at the end, 1.1 cm. at the middle and 1.4 cm. at the point where it is broken off.

The only complete bow from these regions was brought home by the NATHORST Expedition from Cape Weber¹; judging from the illustration it closely resembled those described above.

It is probably justifiable to compare the North-east Greenland bow with the type from Southampton Island²; the manner in which its separate parts, if it is composed of several pieces, are joined together is also the same³.

That the wooden bow, here as elsewhere among the Eskimo, has had a sinew backing is in itself obvious; it is confirmed by the find of implements which have been used for twisting the backing, viz. the twister and the marline spike (Fig. 18). These bone implements are well-known; MURDOCH⁴ has discussed the use of the twister, and both the implements have often been described and figured⁵. They have also been found in North-east Greenland by most expeditions⁶. They will therefore be but briefly dealt with here.

L. 3807--08 and 4025--26. A set consisting of two twisters and two marline spikes (Pl. XIII, 7 and Fig. 18, c—d). The twisters are thin and narrow, 7.6 cm. long, and 6—8 mm. broad, with a large hole at the centre. The marline

¹ NATHORST, pp. 344—345. ² BOAS III, p. 64, Fig. 85, a—b. ³ BOAS III, p. 395, Fig. 189, b. ⁴ MURDOCH II, pp. 315—16 and Plates X—XI. ⁵ Cf. MURDOCH I, pp. 291—294; BOAS III, p. 83; NELSON, p. 111, Fig. 30. ⁶ KOLDEWEY, p. 603, Fig. 16; RYDER I, p. 311, Fig. 11; STOLPE, Pl. IV, 13.

spikes are quadrilateral in transverse section, 11·7 and 10 cm. long and 8—9 mm. in extreme breadth. Like the twisters, they are furnished with a large hole about 3·5 cm. from the butt end. They are probably all from Snenæs, house 406¹.

L. 3641. East shore of Stormbugt, house 319. Marline spike (Fig. 18 *e*), 12·7 cm. long and 1·6 cm. broad at the hole. Made of the side of a narwhal tusk; on one surface part of the hollow of the tusk is seen.

L. 3713. East shore of Stormbugt, in one of tents belonging to the camping ground. Twister (Fig. 18 *a*), 8·8 cm. long and 1·4 cm. broad at the middle; the hole is not placed exactly at the centre. At one edge there is trace of a drilled hole, which bears no relation to the twister as such; probably made when the material was cut out.

L. 4024. Rypefjeldet. Twister (Fig. 18 *b*). Somewhat defective at one end. 7·5 cm. long and 1·4 cm. broad. Besides the usual hole near the centre there is another at one end of the specimen.



Fig. 18. ²/₃.

Bows of Whalebone.

In the northernmost districts of West Greenland, a bent bow of whalebone is found in addition to the bow-forms already mentioned. It is represented in the Copenhagen Museum by a few specimens only. They are made of two layers which have been lashed together in several places by mean of thin whalebone thongs passed through holes placed in pairs; the double layer does not, however, extend to the end of the bow, but only slightly beyond the bend². The great elasticity of the whalebone has made a backing superfluous.

¹ The marline spikes No. 4025-26 are recorded to have been found near Rypefjeldet, but as in other respects confusion has evidently taken place as regards objects from these two finds, owing to the death of the collector, L. MYLIUS-ERICHSEN, I do not hesitate to refer these objects to the same set; they are all of them similarly weathered, and all are furnished with quite an unusually large hole.

² Cf. BIRKET-SMITH II, p. 21 et seq., Fig. 3; another bow, now in Stockholm, is depicted by A. E. NORDENSKIÖLD, p. 481.

There are four end-pieces of similar bows in this collection:

L. 3439. Renskaeret, house 131 (Fig. 19). To the right in the figure the knob for the bowstring is seen. The bow is bent 10 cm. from the end. For the first 8 cm. the breadth increases from 2.1 to 2.6 cm.; after that it decreases abruptly to 2.4; this narrower part of the bow is about 31 cm. long; then it increases again abruptly in breadth. The length is about 44 cm. After the bow has been discarded, the other end has intentionally been cut off square. The narrower portion has probably been strengthened by the



Fig. 19. ¹/₂.

application and lashing on of a piece of whalebone, but no holes are found like those in the West Greenland bows to fasten the pieces together. In course of time the bow has become badly warped.

L. 3440. From the same house as the preceding. It is now quite straight, without any curvature; one end terminates in a knob, the other is broken: length 38 cm., breadth 2–2.1 cm.; weathered.

L. 3414. Renskaeret, house 130; length about 31 cm., breadth 1.6–1.8 cm.; much weathered. One end terminates in a knob, the other is broken. About 4 cm. from the unbroken end there is a notch on each side.

L. 3327. Maroussia, house 141; length 12 cm., breadth about 2.4 cm. One end terminates in a knob, the other now in a bevel.

A breadth of 1.6–2.4 cm. is very narrow for a bow. There is, however, a West Greenland bow of similar breadth, with a length of 82 cm.³

Several of the existing strips of whalebone of similar breadth are probably also fragments of bows. The fact that the whalebone is apt to split into lamellæ is the reason why only very little of this material is in a condition which renders it possible to form an opinion regarding its fashioning.

The specimen first described is the only one sufficiently well preserved to exhibit the original curvature of the bow.

Arrows.

In order that the section on the North-east Greenland arrowheads may be better understood, I give some prefatory notes on the form of this weapon in the rest of Greenland.

The West Greenland arrowheads of bone vary greatly in form². But as a rule they have long-oval blades, of more or less considerable length, tapering to a shank approximately circular in section. When the head is cut from the solid, and not provided with a separate blade inserted in a slit at the front (which is rather uncom-

¹ BIRKET-SMITH II, p. 22, Fig. 3 c. ² Cf. SOLBERG, p. 73, Fig. 54.

mon), it is furnished with one or more barbs on blade or shanks. The end of the shank tapers to a point, and is usually carved with a spiral ridge corresponding to the thread of a left-handed screw, or a portion of such. Often only the rudiments of this appear, e. g. two knobs situated at different levels.

At Smith Sound bows and arrows were not in use when JOHN ROSS in 1818 encountered the Polar Greenlanders for the first time. They were introduced into that region together with several other important features of material culture such as kayaks, salmon prongs, etc.¹, by the immigration of the Cumberland Eskimo in the beginning of the sixties of 1800;² but they were employed a short time only. When the American North Pole Expedition in 1872—73 wintered near Etah, none of the natives had as yet adopted this weapon³, and in the nineties of 1800 it had already gone out of use.⁴

These bows and arrows, being introduced so late and used so short a time, are not of interest in this connection; the arrowheads have the end of the shank cut obliquely to form a splice, a fact which proves their relationship to those of the Central Eskimo.

The Smith Sound Eskimo were, however, acquainted with the bow and arrow in former times; the words are found in their language and occur in their legends⁵. During a visit to North Star Bay in 1909 an arrowhead of this older type⁶ was brought to me by an Eskimo who stated that he had found it at a grave. It had, like the heads from West Greenland, a conical base with two knobs.

BOAS gives the pointed tang as characteristic of the arrowheads of the Mackenzie Eskimo and the West Eskimo in contrast to those of the Central Eskimo.⁷ This western form is that found in West Greenland. A few specimens with pointed tang, however, have been found in the Central Eskimo region⁸ and it is to be expected that archæological investigations will add to their number. At Angmagsalik, the use of the bow and arrow as a weapon had been abandoned at the time of the discovery of the tribe, and the form of the arrows is at present unknown.

¹ KNUD RASMUSSEN I, pp. 31 et seq.

² BESSELS, pp. 341 et seq. STEENSBY I, pp. 261 et seq.

³ BESSELS, p. 360.

⁴ ASTRUP, (p. 130) writes: At our arrival in 1891 hunting was still mostly carried on with bows and arrows; but at our departure in 1894 these weapons were entirely laid aside, and in the near future they will certainly only be on view in a few glass cases in the ethnographical museums.

⁵ KROEBER, p. 275.

⁶ Mus. No. L. 4337.

⁷ BOAS I, p. 505.

⁸ BOAS III, p. 83, Fig. 116 *a* and p. 397, Fig. 193 *b*; compare the doubtful specimen in BOAS I, p. 505.

a. Arrowheads with a pointed tang.

In the majority of the North-east Greenland arrowheads the same pointed form of tang is found as in West Greenland; to this type belong ten specimens from the RYDER¹ and one from the AMDRUP Expedition.² The latter specimen approaches the West Greenland form very closely; it is up to now the only barbed arrowhead known from North-east Greenland. The others, without barbs, have more or less slender, leaf-shaped blades and usually much shorter shanks than they have in West Greenland.

The arrowheads of this kind brought home by the Danmark Expedition are unfortunately all more or less damaged, and can thus hardly be taken as examples.

L. 4021. Rypefjeldet (Fig. 20); length 14.2 cm. The shank and the head pass evenly one into the other; the fore end is widened to admit of a slit for the reception of the blade, which lies in the plane of the greatest breadth, is made by drilling and is 1.8 cm. deep and up to 1.5 mm. broad. There is no hole for nailing the blade to the head. At the bottom of the slit for the blade the head is one cm. in diameter. The shank is so decayed that the form of the butt end cannot be seen.

L. 3806. Snenæs, house 406; length 20.4 cm. Type similar to the preceding, but not much broader at the fore end than at the tang; at the fore end, which is defective, the traces of a slit for the blade are seen. The shank is 8 mm. broad, and terminates in a point with a small knob on each side.

L. 4022. Rypefjeldet (Fig. 21 a). Fore end broken off; present length 8.4 cm., extreme breadth 1.5 cm. The head is triangular in transverse section and tapers gradually to a short pointed tang, which is 9 mm. broad and furnished with two half screw-threads.

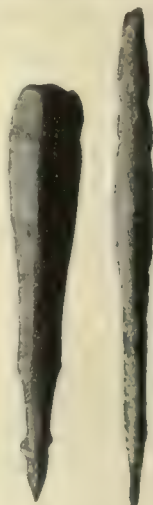
L. 3558. Renskæret, house 134 (Fig. 21 b); length 10 cm., slender, extreme breadth of head 9 mm. and of shank 5 mm.; pointed tang with slight indications of two knobs.

L. 3727. North-west of Wendels Pynt in the neighbourhood of Danmarks Havn, tent 231; length 7.2 cm., extreme breadth of head 6 mm. and of shank 5 cm.; pointed tang without knobs.

All the arrowheads described above have, as far as can be seen in their present condition, terminated in a pointed tang; in the two



Fig. 20.
2/3.



a b
Fig. 21. 2/3.

¹ RYDER I, p. 309, Fig. 9. One of the specimens however is not smooth-sided, but made with 4 vigorous cuts.

² THALBITZER I, p. 366, Fig. 8 and Pl. XVI, 17. An examination of the piece itself shows that its present state is not the original one; the rear end of the tang has been pointed, but its extreme tip is broken and one side of the cone is now decayed. Cf. further in Medd. om Grøn. LIII, p. 420.

first-mentioned the leaf-shaped fore end is short and thick and has a slit for the blade, in the others it is long and slender. The two latter have undoubtedly belonged to weapons for children.

b. Arrowheads with wedge-shaped tang.

All the specimens described below are bevelled at the lower end on one or on both sides for insertion into the split fore end of the shaft; the wedge thereby formed lies in the plane of the flattened surface of the head.

L. 3052. (Pl. IX, 1). As to the form related to L. 4021 and L. 3806; length 8.3 cm. In the ellipsoid fore end a blade-slit, 8 mm. deep and 1.5 mm. broad, has been made by drilling.

L. 3053. (Pl. IX, 2). Related to L. 4022 et seq.: length 8.5 cm.

These two arrowheads, both from Snenæs, grave 423, are miniature weapons like the two preceding specimens. The four described below are weapons for use corresponding to the miniature specimen L. 3053. They are made of bone, cut from the solid, with long, leaf-shaped blades, triangular in transverse section, narrowing to a tang, which is bevelled on one or both sides in the plane of the blade; they have required a thick shaft. Close to grave 422 at Snenæs, where two of them (L. 3044 and 3045) were found, a fragment of a rather thick shaft was lying together with them; it probably belonged to one of the heads (Pl. VIII, 4—7).

L. 3041. (Pl. VIII, 4); length 19.4 cm., extreme breadth 2.3 cm. The tang bevelled on the ridged side and roughened for a distance of 3.3 cm.; breadth 1.3 cm.

L. 3044. (Pl. VIII, 5); length 23.6, extreme breadth 2.4 cm. The tang bevelled on both sides and roughened for a distance of 3.7 cm.; breadth 1.4 cm.

L. 3045. (Pl. VIII, 6); only the blade part of the head preserved; present length 20.4 cm., extreme breadth 2.4 cm.

L. 4145. The spring settlement at Rypefjeldet, tent 615. The anterior portion of the blade; present length 11 cm., breadth 2 cm.

The heads included in this group are of a type peculiar to North-east Greenland, which has no parallel on the west coast. Three specimens from the AMDRUP Expedition¹ probably belong to this group, but they must all be regarded as unfinished, not even the cutting edges having been sharpened.

c. Obtuse arrowheads.

A more peculiar form of bone arrowhead, with an obtuse point and a bevelled tang, is represented by the three following specimens:

¹ THALBITZER I, pp. 364—66; Pl. XVI, 14 and 15.

L. 3117 *b*. Thomas Thomsens Næs, near tent 48 (Fig. 22 *b*); length 8.3 cm., extreme thickness 1 cm.; straight. The anterior portion is elliptical in transverse section. Bevelled surface 3.5 cm. long.

L. 3894. "Bastionerne" (Fig. 22 *c*); length 10 cm., extreme thickness 1.1 cm.; bevelled surface 4 cm. long. Form like that of the preceding specimen.



Fig. 22. $\frac{1}{2}$ a.

L. 3410. Renskæret, house 130 (Fig. 22 *a*). Made from the tip of an antler and retaining its curved form; length 9.4 cm., extreme thickness 1 cm.; bevelled surface 4.2 cm. long.

RYDER brought home four specimens of this kind¹, which he undoubtedly with justice regards as heads of bird arrows. On the other hand, judging from their form, they have hardly, as the author appears to believe, been employed singly, spliced to the shaft. Regarding the West Greenland bird arrows Hans Egede writes²: "The bird arrows are furnished with two or three obtuse bone pieces at their apex, so as to kill the birds only and not spoil the meat". In the West Greenland collection belonging to the National Museum in Copenhagen there is a double-pointed arrow of this kind with its shaft still preserved, but its exact origin is not known.

I am inclined to believe that the above-mentioned specimens should be regarded as arrowheads of this type.

d. Arrow shafts.

Regarding the shafts of these different kinds of arrowhead the collection gives but little information.

It has been mentioned above that in the grave find from Snenæs (grave 422), together with three large, slender arrowheads with wedge-shaped butt ends, a fragment of a shaft (L. 3048) was discovered, which judging from its position must be regarded as having belonged to one of the heads. It is, however, defective at both ends; at the fore end it is circular in section, about 1.3 cm. in diameter; towards the nock, on the other hand, it becomes elliptical in section, about 1.6×1.2 cm.; it terminates in a bevelled plane to which the rear part of the shaft has been spliced (Pl. VIII, 7).

The only arrowshaft (L. 3863) which may be regarded as probably complete in the essential parts comes likewise from Snenæs, but was found in the neighbourhood of houses 406 and 407 (Pl.

¹ RYDER I, p. 310, Fig. 10. ² HANS EGEDE, p. 56.

XVIII, 8). It is 49.5 cm. long. Its weathered surface does not permit of judging with certainty that the split at the fore end was made intentionally for the insertion of the head. 10 cm. from the fore end, where at any rate it preserves its original thickness, it measures 1.8×1.3 cm.; from this point it becomes broader and flatter towards the butt end, terminating at the notch in a breadth of 2 cm. and a thickness of only 3 mm.

The posterior part of a similar shaft (L. 3663) was found near the houses on the east shore of Stormbugt (Pl. XVIII, 7). The fragment, which is 27 cm. long, measures at the fore end 1.5×1 cm. and at the nock rather more than 2 cm., the thickness being 3 mm. These are the only specimens which may be classed with certainty as arrowshafts intended for actual use. There are in addition some shafts for arrows used as playthings, viz. Fig. 42 and Pl. XXV, 24; in the case of the latter some fragments of the sinew thread with which the feathers have been attached still remain. Moreover, there are several round sticks which are probably parts of arrow shafts.

The few arrow shafts contained in the collection are strong specimens, broad at the butt end. For purposes of comparison it may be mentioned that as regards 13 West Greenland shafts preserved in our National Museum the thickness at the fore end is 0.9—1.1 cm. while the breadth at the nock in 6 of the specimens is likewise 0.9—1.1 cm. and in no case does it exceed 1.5 cm. The length is on an average less than in those already described, but varies greatly; five for instance measure between 32.2 and 35.5 cm., four others between 38.4 and 46.7 cm., while the remaining four are as much as 52, 57, 58.7 and 59 cm. long respectively. The two last shafts, long and similar in shape, belong to the same grave find; but specimens found in the same grave may very well differ considerably; thus in one find, one of the specimens measures 32.8 cm. and the other 52 cm. in length, while in another the lengths are 32.5 cm. and 38.4 cm.

It is possible that the thick arrow shafts found in North-east Greenland were intended for the large heads of type *b* — the split in the specimen figured in Pl. XVIII, 8, might be taken as an indication of this — and the more slender specimens for the smaller heads with a pointed tang; several of the small undeterminate fragments are of slender dimensions. At the present time, this question cannot be solved.

Fox Traps.

In the stone-built traps which the Eskimo set up, for the capture of foxes especially, the bottom is formed by the rocky base

upon which they are erected; the traps are thus so closely connected with the ground itself that a description of them should naturally be placed together with those of graves, houses, meat stores and other fixed stone remains. And as regards the Danmark Expedition, they are also included in Hr. CHR. BENDIX THOSTRUP's section,¹ where mention is made of over 80 traps encountered by various members of the Expedition on their journeys.

There would thus be no reason to refer to them here, were it not for the fact that the material actually brought home included a specimen of the type: a fox-trap,² which Hr. THOSTRUP found set, together with 11 others, at Baadskæret, — evidently a particularly favourable spot for the capture of foxes. The traps were placed here and there between the meat depots, the smell from which would doubtless have served to attract the animals to the place.

This particular trap is described at the place quoted as follows: "Built of medium and small stones. Falling door in its place. One of the uppermost covering stones removed". The dimensions of the inner chamber are stated as: Length 0·60, breadth 0·20 and height 0·17 m. The condition in which it was found, with door closed and the upper stones in disorder, shows that the last time it was touched by a human hand must have been when the trapper lifted the covering stones to look at his catch.

The three sides of the trap are formed of 7 stones, one in the rear wall and 3 in each side wall; the space thus enclosed is roofed and weighted down with 12 other stones. In front of this chamber, a stone is placed on either hand, in continuation of the two long sides; between these two stones and the next pair a space has been left for the falling door, a more or less flat stone, which, when stood on edge, sufficed to close the trap. The foremost pair of stones are intended to hold the door in place, and prevent the captured fox from forcing it out. The bait is placed on a pointed stone set in the back wall.

When the trap is set ready for use, the falling door is held up by a thong passing lengthwise over the roof, with the bait attached to the other end. As soon as the animal has torn the meat from the stone on which it is skewered, the holding thong is released, and the entrance closed by the fall of the stone door. The fox being

¹ Especially p. 198—200, Fox traps; illustrations p. 198 and 244; hollow cairn p. 233—35.

² Mus. No. L. 3616. Described by THOSTRUP p. 259 under No. 279. The stones were marked on the spot before taking the trap to pieces, and the subsequent setting up in the Museum was carried out by Hr. THOSTRUP himself in accordance with the original notes.

thus taken alive, it is imperative that the stones be heavy enough to resist any attempt on the part of the victim to thrust them aside; the trap itself, also, must be erected on a floor of solid rock, to prevent burrowing out beneath the stones.

It is this type of fox trap which was formerly employed throughout the whole of Greenland, and which is still in use to some extent. In the colonised parts of West Greenland, where wood is more generally available, another type is now also used, without the falling door. In this case, a board is laid in a sloping position lengthwise through the chamber of the trap, with one end resting on the ground at the rear wall, the other being held, by a contrivance similar to that already described, on a level with the roof of the entrance. A pull at the bait releases the hold, and the board, weighted with stones, falls down upon the inmate and kills it.

Means of Conveyance.

The Sledge.

In such high latitudes the sledge is of course the principal means of conveyance; its importance can be estimated from the fact that at the corresponding degree of latitude on the west coast of Greenland, at Smith Sound, from the discovery of this tribe in 1818 to the Central Eskimo immigration in the sixties of the 19th century, it has been the only means of conveyance. Southwards it becomes of less importance as compared with the kayak, and on the west coast, the Arctic Circle forms its approximate southern limit, while on the east coast it has been used considerably more to the south, at any rate, at the place where GRAAH wintered, Nunarfik (Nunarvik), at about $63^{\circ} 20'$ N. lat. whence he records that the inhabitants travelled in sledges southwards to visit their relatives;¹ but it is possible that it has been employed as far as the southern limit of the country².

The Danmark Expedition did not find any large parts of sledges, but they nevertheless contribute some information to our knowledge of the North-east Greenland sledge.

Of objects belonging to sledges, sledge shoes are in the majority. As is common in places where iron is not easily accessible, the runners are shod with pieces of bone. About 50 specimens were discovered of which 10 came from the isolated northern find on Eskimonæsset, and 24 from the sea coast of Germania Land of which 20 are from Syttenkilometernæsset; the rest were found on the north coast of Dove Bugt.

¹ GRAAH I, p. 115; II, p. 112.

² In 1880 G. HOLM was informed that at $60^{\circ} 30'$ dog-sledges were used for ice-hunting (Medd. om Grøn., VI, 68); this is cited in English in THALBITZER II, p. 341. As regards the previous use of the dog-sledge in the districts of Julianehaab, see BIRKET SMITH I, pp. 14 et seq., published after this was written.

Several pieces of bone of this kind are required for the length of a sledge, the number varying according to the length of the bone pieces, which is very unequal. The longest specimen in the collection, for instance, measures 50·7 cm. in length; six are upwards of 30 cm. long, but the majority are much shorter, some only a few centimetres long. The longest piece of sledge shoe from North-east Greenland known to me measures 75 cm.; it is in the Christiania Museum.¹

The breadth is considerable, most frequently 5—6 cm.; in one case, however, it was only 3·7 cm., in another 7·5 cm. The specimens found by the other expeditions in these regions are of similar dimensions. Thus those found by RYDER at Scoresby Sound vary from 4·9 to 7·7 cm. with the exception, however, of two specimens, which are only 4·3 cm. broad. For purposes of comparison it may be stated that the breadth of the shoes of the West Greenland sledges is only 2·3—3·3 cm., and that those from the Cape York District and from Angmagsalik are of like dimensions. This difference is, however, probably in most cases due only to the difference in the thickness of the material used for the runners, viz. thick planks from wrecks driven ashore in contrast to boards. On the other hand, sledges with broad runners are said to be better than those with narrow ones.²

In one case the thickness of a sledge shoe is as much as 2·9 cm., but usually it is far less, and in cases of much worn specimens it is reduced to a minimum.

The shoes have been fastened to the runners with wooden nails, which still remain in several of the specimens. The holes have, intentionally, been drilled not vertically, but obliquely in several directions in order to afford a better hold. The holes are usually irregularly distributed over the shoes; sometimes, however, they are fairly regularly placed, obliquely facing each other, as on Pl. XVIII, 14.³ The main intention has evidently been not to place them opposite each other and thereby lessen the strength of the bone; the holes are, however, occasionally so placed, as may be seen in the specimen (L. 4031) described below.

On Pl. XVIII, 11—15 are shown some of the shoes found. The one (L. 3811) figured on Pl. XVIII, 14, from Snænæs, house 406, is peculiar. It has been placed at the fore end of the runner, and the point is tapering and rounded; a nail hole is drilled at the tip, and behind it there is a groove which has undoubtedly served to receive

¹ Mus. No. 13889; is now broken into several pieces. ² Cf. MASON V, p. 547.

³ Cf. THALBITZER I, 436.

a thong for fastening the shoe to the runner. Length 35.3 cm., extreme breadth 6.7 cm.

There is also a similar groove on the specimen (L. 3197) figured on Pl. XVIII, 15, from Syttenkilometernæsset, the broadest and thickest shoe in the collection. It is 7.5 cm. broad, 2.9 cm. thick and 20.5 cm. long. The groove is, however, but roughly cut, and the general appearance of the object conveys the impression that it has not been used.

The longest of those (L. 3091) from Eskimonæsset is that figured on Pl. XVIII, 13; it is 50.7 cm. long and 4.9 cm. broad. In the lower end of the figure it is seen that three nails still remain fixed.

On a shoe from Rypefjeldet, Pl. XVIII, 11 (L. 4031) the holes at the middle of the piece are, contrary to custom, drilled opposite to each other, three in a row; the central hole in both rows, as also the outermost at one end, have not, however, been pierced right through. The specimen in question is 14.6 cm. long and 4.7 cm. broad.

The one from Renskæret (L. 3597), which is only 11 cm. long and 4.2 cm. broad, is cut off square at one end and separated by drilling at the other.

The material employed has for the most part consisted of hard varieties of bone, viz. whale's bone and narwhal tusk; but sometimes the natives have been obliged to put up with antler, the soft structure and irregular form of which makes it less suitable for this purpose. At least three of the specimens in the collection are of the latter material.

L. 3192 from Syttenkilometernæsset; length 13.5 cm., and extreme breadth 5.3 cm., with 6 holes.

L. 3602 from Renskæret; length 31 cm., extreme breadth 5.2 cm., with 12 holes.

L. 3741 from Stormnæs, from near the so-called "Wolf Trap" (Ulvefælde)¹; length 26.7 cm., extreme breadth 3.7 cm.; with 11 holes.

The shoes of antler have, in contrast to those of harder kinds of bone, retained the rounded surface of the antler on the gliding surface, as by flattening them, the softer inner tissue would be laid bare. Shoes made of antler have also been previously found in these regions.²

Of parts belonging to sledges the collection contains, besides the shoes, only four fragments of cross-bars, viz. Pl. XVI, 5 and 6 from Syttenkilometernæsset (76° 49'), Fig. 23 *a* from Renskæret (76° 41'), house 134 and Fig. 23 *b* from the spring settlement at Rypefjeldet

¹ THOSTRUP, p. 275, No. 378.

² Cf. for instance KOLDEWEY, p. 601, Fig. 4.

(76° 56'), tent 634. As features peculiar to all the specimens may be mentioned a notch at the edge near the end and a chamfer running down the outer edge and terminating 5-7 cm. within the notch (see Fig. 23). This is used for the purpose of securing the lashing with which the cross-bar was fastened to the runner. As is well known, the shoes are the only parts of the sledges fastened with nails; all other parts are lashed together with thongs for the sake of elasticity. The cross-bars are secured by a thong which is carried across them in a line with the outer side of the runner, then passed through the latter to the inner side, where it again crosses the cross-bar. The notches have served to receive the outer thong and thereby guard against slipping, while the increasing

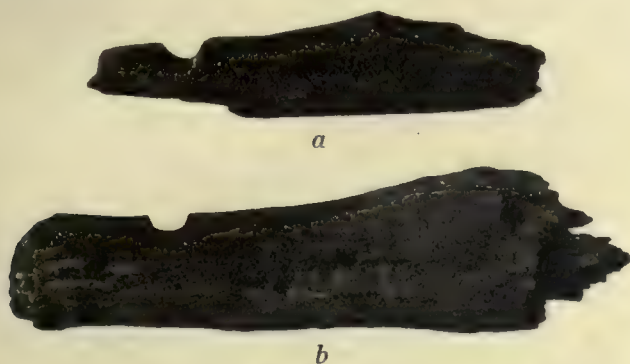


Fig. 23. $\frac{1}{2}$.

breadth of the cross-bar prevented the inner transverse thong from working inwards towards the middle. In the specimens from Syttenkilometernæsset the breadth of cross-bars between the bottom of the notches is 5.5 cm. and 3.7 cm. respectively.

While sledge shoes have been brought home by all the expeditions, the material for the study of the wooden parts of the sledge is more scanty. In the Berlin Museum there is a complete sledge found by KOLDEWEY's expedition near Cape Hold-with-hope (73 $\frac{1}{3}$ °), in Stockholm there are a runner and some cross-bars from the NATHORST expedition and the National Museum at Copenhagen has a toy sledge brought home by Captain AMDRUP from Skærgaards Halvø (68° 07')¹. SCORESBY also found a sledge runner, but I do not know where it is preserved.

In the light of the above material it is of course impossible to determine for certain the relation of the North-east Greenland sledge

¹ As regards these specimens I refer the reader to THALBITZER I, pp. 508—511 and 388—394.

to the other Greenland types, the more so because the fragments found show certain variations as regards details. Certain main points may, however, be emphasised, so that the subject ought not to be entirely omitted.

In the inhabited part of Greenland there occur three types or, properly speaking, variations of the main type of the not built up sledge common to the larger, eastern, portion of the Eskimo domain; they differ as regards dimensions and certain structural features, but all have uprights at the back.

The West Greenland sledge, which is used south of Melville Bay down to Holsteinsborg (about 74° — 66° N. lat.), is long and broad; the three sledges of this kind preserved in the National Museum in Copenhagen have a length of 2—2.10 metres with a breadth of 90—95 cm. The Polar-Greenland sledge in use among the northernmost tribe of the west coast (about 76° — 79° N. lat.), is likewise long, even longer than the one just mentioned (2.27—2.64 metres, judging from the pieces measured by me), but at the same time considerably narrower, 0.54—60 m. broad. Lastly, the Angmagsalik sledge is both short and narrow; it measures 1.53—1.74 metres in length and 34—50 cm. in breadth.¹ On the other hand, the three types do not differ as regards height; all three sledges are equally high or, properly speaking, equally low; in the specimens measured the height varies between 15 and 19.5 cm.

Thus, as regards dimensions, the North-east Greenland sledge is very nearly allied to that from West Greenland; the dimensions of the Berlin sledge, 2.08×0.93 metres, agree closely with those of the West Greenland sledge; the Stockholm cross-bar has a corresponding breadth (about 0.95), while the runner is shorter, 1.67 metres; it is possible that it is broken at the rear end.²

I shall not dwell on the differences in the uprights of the different types, as this part of the sledge has not yet been found in North-east Greenland; the pieces which are now screwed on to the Berlin sledge are not uprights;³ I should prefer to believe, that they are oblique bars like those which, in the case of the Polar-Greenland sledge, connect the runners with the cross-bar (see THALBITZER I, p. 513, Figs. 87—88); as regards form and length, they are

¹ Cf. THALBITZER II, pp. 366 et seq.

² Judging from the figure by THALBITZER I, p. 511 this appears probable; I myself have had no opportunity of seeing the specimen in question.

³ W. THALBITZER (I, p. 394, footnote) writes: "In any case there is reason for supposing that the uprights, if they existed, were fastened to the inner side or the upper surface of the runners, not to the outer side." The uprights, however, always rest upon the cross-bars above the runners and are lashed to the latter.

very suitable for that purpose, and in the sledge which we are discussing, as in the Polar-Greenland sledge, the runners project well beyond the seat, and therefore furnish space for supports of this nature.¹ In the NATHORST sledge, on the other hand, the runners are less projecting.

Similar variations may be noticed as regards the fastening of the cross-bars to the runners. The specimens collected by the Danmark Expedition (Pl. XVI, 5 and 6) show that the lashing, as in both the western types, has been carried across the cross-bar along its entire breadth, while those found previously have holes through which it was carried down as in the Angmagsalik sledge; also the number and grouping of the holes differ in the different specimens.

Similar uncertainty prevails concerning the number of the holes in the runners which correspond to each cross-bar. In the majority of the specimens there appear to have been two holes for each cross-bar; in the AMDRUP sledge there is one only. But in the case of a toy, details should not be taken too seriously, and the difference is not essential in itself, dependent as it evidently is on the breadth of the cross-bar.

Judging from the scanty material we have before us, it may be stated in general terms that the North-east Greenland sledge is in the main of West Greenland type, only with some slight alterations of minor importance; it is a large and spacious travelling sledge, quite different from the small, narrow, Angmagsalik sledge. There is hardly any reason to doubt that it has had uprights; thus, I should prefer to believe that the irregularly placed penultimate holes in the AMDRUP toy sledge had served to fasten the uprights.

Of appliances for harnessing, the collection of the Danmark Expedition contains only three bone buckles used to connect the harness of each individual dog with the common trace proceeding from the sledge. They are of the usual shape, flattened pyri-form (Pl. XIII, 11 and 12), and furnished with two holes, one larger, in the broad, hinder part, through which the trace proceeding from the sledge is carried, and one smaller, in the front part for the dog's trace. From this hole a groove extends on both faces down to the fore part of the buckle, and serves to receive the line and prevent it from slipping. The fact that the buckle figured in Fig. 24 differs in form at the rear end is of no importance as regards the present use of the object as a toggle, but indicates that it is made of a discarded loose shaft of a harpoon or lance.

¹ This suggestion is supported by BIRKET SMITH (I, p. 16).

The three specimens are:

L. 3809—3810 (Pl. XIII, 11 and 12) from Snenæs, house 406, 6·2 and 7·8 cm. long and 3 and 3·1 cm. broad respectively.

L. 3896 (Fig. 24) from the plain west of Hvalrosodden¹, 6·3 cm. long and 3 cm. broad.

There are in addition two miniature buckles, L. 4009—4010, from winter houses at Rypefjeldet (Pl. XXV, 22 and 23). They are only 3 and



Fig. 24. $\frac{1}{2}$.

2·1 cm. long respectively; the larger of them has, besides the usual two holes, a third hole in the fore part of the groove and one hole drilled from the fore end at right angles to this hole; the line has probably been carried through the hole in the fore end round through the two

next holes and then back again, so that both the lines meet in the hole at the fore end instead of, as is usual, in front of the buckle. As far as I know, no real sledge buckle is of this construction; it is probable that these carefully made specimens have been used as ornaments.

Boats.

The methods of transport by water constitute a subject of which we have less knowledge than of any side of North-east Greenland archæology. We have a positive though not detailed statement of the fact that the Eskimo in $74\frac{1}{2}^{\circ}$ N. lat. had boats when CLAVERING visited them in 1823. In the account of how one of the sailors, to the great astonishment of the natives, shot a seal with a gun, it is said that one of them was requested to fetch the dead animal, floating on the water, in his boat.² To judge from the context, the boat must have been a one-man boat, consequently a kayak. However, parts of boats have not yet been found by any expedition, and, as regards accessories, a defective paddle from Cape Borlace Warren ($74^{\circ} 18' \text{ N. lat.}$)³ is the only object which has yet been published, unless bird-darts, winged harpoons and throwing sticks, the presence of which implies the use of the kayak, are reckoned as accessories thereto.

Consequently, as it has not hitherto been possible to form an opinion on the appearance of the North-east Greenland kayak, the small model, carved in wood (Pl. XXV, 5), found on the camping ground of Syttenkilometernæsset, is of importance. The specimen in question (L. 3243) is 11·5 cm. long and 1 cm. high in the middle. It is but 5—6 mm. thick; consequently, the model has been

¹ THOSTRUP, p. 291. ² CLAVERING, p. 327. ³ Museum für Völkerkunde, Berlin, No. IVA 186; KOLDEWEY, p. 603; Fig. 12; compare p. 608.

intended to be viewed in profile only, and can tell us nothing of the proportionate breadth. The stern is bent upwards, but not the stem. The manhole is situated rather far back; at this point is a triangular projection; the side of it facing the stern is in its original condition, while that facing the stem is somewhat damaged. The hunter has probably been represented as sitting in the kayak, and the anterior slanting outline possibly indicates that the skin covering has been raised here and that the plane of the coaming of the manhole formed an angle with the longitudinal axis of the boat.

If a comparison should be made on the basis of this little plaything, it must be said that it recalls the sea kayak of the Aivilik¹ in its straight bows, its up-curved stern, and in the oblique coaming of the manhole, situated behind the centre of the kayak; and it may be added, that the above-mentioned paddle from Cape Borlace Warren resembles the paddle belonging to this Aivilik kayak² in the outline of the blade.

In THOSTRUP's description of the settlements visited by the expedition, some information, derived from another source, is given concerning the boats from these regions. In seven different localities from 77° 11' to 75° 43' N. lat. the above expedition came across as many as 13 sets of stone posts which were interpreted as posts used for the laying up of boats.³ Three sets, at Renskæret (THOSTRUP p. 238, Nos. 136—138), are designated posts for umiaks, while the others are said to have served as posts for kayaks.

The peculiarity of these posts is that they are always found in sets of three, and not, as is usual, in pairs. THOSTRUP is of opinion that this is due to the length and greater fragility of the boats. But the kayak-lengths indicated by some of the distances between the posts renders this view somewhat doubtful. In four cases the distances between the two outermost posts are only 3·25, 3·30, 4·20 and 4·50 metres; but in four others they are 6·10, 6·10, 6·40 and 6·75 metres. Since it is impossible to imagine that a kayak could rest safely on supports at the extreme ends — even though the addition of a third post in the centre might permit the others to be placed farther apart than in the case of two alone⁴ — at least one metre, and probably more, must be added to the measurements noted above in

¹ BOAS III, p. 77, Fig. 106 *b*.

² Loc. cit. p. 79, Fig. 107 *b*.

³ THOSTRUP, p. 216 (Nos. 35, 36, 37); p. 226 (Nos. 93, 95, 96); p. 238 (Nos. 136, 137, 138); p. 257 (No. 260); p. 262 (No. 304); p. 319 (No. 655) and p. 331 (No. 721).

⁴ In West Greenland, where only two posts are used, these stand fairly well inside the kayak, see for instance STEENSBY II, p. 141, Fig. 2. I myself have observed cases in which the length of the kayak was more than double the distance between the posts.

order to give the length of the kayak, but in this way we arrive at dimensions far greater than recorded of the Greenland kayaks. Thus, a South Greenland kayak in the National Museum in Copenhagen, measuring 6.45 metres, is considerably larger than the other kayaks preserved in the museum, these measuring from 5.02 to 5.67 metres in length, which is the average length of the Greenland kayak. In Central Eskimo regions, however, much longer kayaks are found. PARRY, for instance, records the length of a kayak on Winter Island south of the Melville Peninsula as 25 feet (about 7.60 metres)¹ and a Kinepetu kayak in New York even measures 8.60 metres;² consequently, there is no inherent reason why the North-east Greenland kayaks should not have been of considerable length.

On the other hand, we should hesitate to infer the presence of the umiak on the evidence of the posts at Renskæret, as long as no other is forthcoming. In one case the distance between the outer posts is not greater than that between the kayak-posts No. 93, and the breadth, 1.25 metres, does not greatly exceed the breadth of 1 metre given for the central posts of Nos. 35 and 655, which is unnecessarily great if they are intended to carry one kayak only; in the two other cases the length is greater, 7.90 and 7.10 metres, but the breadth is only 1.10 and 1.25 metres.

However we may try to interpret these stone posts, we come across features which are difficult to explain; it is therefore hardly opportune, at the present moment, to infer too much. The honour of having first drawn attention to these peculiar relics of the North-east Greenland Eskimo is due to the Danmark Expedition; the final solution of the problem which they present appears to demand the collection of further material.

¹ PARRY, p. 506. Here also two posts only were used, as is still the case on Southampton Island, cf. BOAS III, Pl. V, 2.

² BOAS III, p. 76.



Tools.

Snow Knives.

Of the well-known, broad, bone knives (Pl. X, 1—2, Pl. XIX and Pl. XX, 1—2) there are in the collection nine complete specimens and two fragments.

A feature common to them all is seen in the fact that the handle forms a more or less sharp angle with the blade, and is furnished at the butt end with a knob on the same side as the concave or cutting edge. The blade is broader than the handle, more or less strongly curved, and rounded at the fore end.

But as regards the transition from handle to blade the knives are divided into two distinct groups or types. In the one, which is the more common, the blade expands abruptly on both sides of the handle; but the two "shoulders" do not stand opposite to each other, that on the cutting edge side being always somewhat anterior to that on the same side as the back, probably in order to allow more room for the fingers.¹ The "shoulder" on the back side moreover, prevents slipping, and so provides a good firm grip on the handle.

In the other group, the blade expands abruptly on the edge side only, while at the back the handle and blade merge evenly one into the other in a more or less curved line.

It should be added that, though a differentiation between "edge" and "back" is made here, there is no corresponding difference in thickness; the thickest part occurs in the middle line of the blade; the edges are rather thin, though not sharp; the one face is rounded, having more or less retained the original outer form of the bone, the other is flat.

¹ In two West-Greenland specimens in the National Museum in Copenhagen, from Umanaq (King Frederik VII's collection) and from Sermermiut at Jacobshavn (L. 1744) there are finger notches on this side of the handle.

Sometimes a hole has been drilled for the suspension of the knife. In three cases it is placed at the butt end of the handle, in two knives of Type I in the "shoulder" on the back of the knife.¹

Type I, with double shoulder at the junction of blade and handle, is represented by six specimens:

L. 3183. Syttenkilometernæsset (Pl. XIX, 2); length 32.6 cm., extreme breadth 6.5 cm. Four holes have been drilled in the posterior portion of the back of the blade, of which now only the front one remains entire.

L. 3477. Renskæret, house 132 (Pl. XIX, 5); length 24.5 cm., extreme breadth 5.9 cm. The blade has fairly straight edges, and is very broad in proportion to its length. In the knob at the butt end of the handle a hole has been drilled for suspension.

L. 3478. From the same house as the preceding (Pl. XIX, 4); length 27.8 cm., extreme breadth 8.8 cm. In form it closely resembles the preceding specimen; it has, however, no hole at the butt end of the handle, but one at the shoulder on the back.

L. 3529. Renskæret, house 133 (Pl. XIX, 1). Unusually narrow; length 29.5 cm., extreme breadth only 3.5 cm. It is slightly curved in form; at the butt end is a hole for the reception of a thong.

L. 3652. Winter settlement on the east shore of Stormbugt (Pl. XX, 2); length 23.7 cm., extreme breadth 4.6 cm. It is made of antler, the inner tissue of which appears upon one side of the specimen, and is much weathered, which doubtless accounts for the fact that this knife, in contrast to all the others, has no knob at the butt end of the handle.

L. 4030. Winter settlement at Rypefjeldet (Pl. XIX, 3); length 29.1 cm., extreme breadth 7 cm. Like L. 3478, it has a hole at the shoulder on the back. The knob at the butt end of the handle is now missing, but two drilled holes at this point show that it has been lashed to the butt as a separate part; the point of juncture has been cut smooth and straight so as to make a neat joint. In the flat surface thus formed is a drilled cavity, the occurrence of which I believe to be accidental, hardly intended to receive a tap on the opposite flat surface, a manner of joining not usual among the Eskimos.

Type I is the common form for the North-east Greenland snow knife. Besides the six specimens belonging to this collection, the National Museum in Copenhagen contains four specimens from Danmarks Ø at Scoresby Sound (70° 26' N. lat.)² and one from Cape Tobin (70° 24' N. lat.).³ In the Christiania Museum there is one from the region of 74° 20' N. lat.,⁴ and of the NATHORST collection in Stockholm three specimens of this type are figured by STOLPE⁵. Consequently, there are at least 15 specimens from the stretch of coast between 76° 49' and 70° 24' N. lat.

¹ A snow knife brought home by the Amdrup Expedition from Dunholm has holes in both the places mentioned above (THALBITZER I, p. 438, Fig. 42).

² L. b. 712, 717, 738, 740; cf. RYDER I, p. 320, Fig. 19.

³ L. 4527; cf. footnote 1.

⁴ No. 10039,

⁵ STOLPE, Pl. IV, Fig. 12; the central figure in the plate.



Type II, with regularly curved back, is far less frequently represented, in the present collection by three specimens only:

L. 3099. Eskimonæsset (Pl. X, 1). A very large and strong specimen; length 40.9 cm., extreme breadth 7.3 cm.

L. 3116. Thomas Thomsens Næs (Pl. XX, 1); length 33.4 cm., extreme breadth 6.1 cm. The tip is broken and the specimen is altogether somewhat weathered. At the knob of the handle there is a hole for suspension.

L. 3592. Renskæret, house 135 (Pl. XIX, 6); length 32.2 cm., extreme breadth 5.4 cm. The edge is almost straight, the back, which is somewhat damaged, was slightly curved.

Of this type only one is known to me besides the three specimens mentioned; it was brought home by the NATHORST Expedition and has been figured by STOLPE in the place cited in footnote 5 on p. 422.

For the sake of completeness I must here mention the two fragments in the collection, viz.:

L. 3556. Renskæret, house 134. A handle, made of antler. Its present length is 12.5 cm.; at the butt end it has the usual unilateral knob.

L. 3100. Eskimonæsset (Pl. X, 2). A broken blade. Present length 29.5 cm., extreme breadth 4.8 cm.

The type, which occurs more rarely in North-east Greenland (Type II) with the unilateral expansion of the blade and the regularly curved back, is also found among the Polar Greenlanders.¹ Moreover, the blade of the West Greenland snow knife has a similar unilateral shoulder, but it differs from the knife of North-east Greenland in the fact that the back is usually bent abruptly at an obtuse angle with the handle². In the National Museum in Copenhagen this type is represented by 15 specimens, none of them known to have been found south of Jakobshavn (69° 13').³ Consequently, as was to be expected, the snow knife belongs to the Arctic regions. The ivory knife which occurs also more to the south on both coasts of Greenland, and is used for scraping ice from the kayak, was doubtless originally allied to the snow knife, but it has, both in Greenland and in several other places, developed into a special implement of a peculiar shape, having a narrow blade which usually shows no marked differentiation from the handle portion.

Type I, with blade expanding abruptly on both sides, has not, so far as I know, been recorded with certainty from other places in Greenland than on the north-east coast. One specimen, which in JAPETUS STEENSTRUP's collection is grouped with objects from West

¹ BESSELS, p. 356; KROEBER, p. 271, Fig. 2.

² In a few cases, however, the back is regularly curved or even straight.

³ Eight specimens in the late Professor JAPETUS STEENSTRUP's collection, now in the possession of Professor JOHANNES STEENSTRUP, show the same local peculiarities, one of them is of whalebone.

Greenland, has unfortunately no label attached to it.¹ On the other hand, this type is found in Central Eskimo regions; Boas² figures a series of snow knives from Southampton Island and from Gore Bay, situated to the north of the latter, and also from Ponds Bay, which show an evident relationship to those from North-east Greenland. One of them, which differs, however, in having a handle with bilateral knob, has a series of holes in the posterior portion of the back of the blade, like the specimen figured in Pl. XIX, 2.³ Another series of snow knives figured by Boas from Iglulik and Ponds Bay⁴, in which the blade and the handle are of separate pieces of ivory, illustrates the same shape, but not in so pronounced a manner; of an allied type, but likewise somewhat rounded in form, are two knives from Cumberland Sound⁵. From the latter locality, and from Southampton Island, there are, however, snow knives of other forms also⁶, possibly differing in age from the preceding; in the majority of the Eskimo departments material is still lacking for chronological determination.

Men's Knives.

In North-east Greenland the man's knife was most frequently made of slate; in the present collection, for instance, there are some 10 more or less complete specimens of this material, besides several fragments (Plates VIII, 1; IX, 4; XII, 1; XIII, 14 and XXI).

They differ, however, considerably in form; sometimes the whole knife is of slate ready for use, the blade and handle being of one piece; sometimes the handle portion is quite thin, and requires reinforcing with wood or bone; others again have only a short tang, much shorter than the haft into which it had been inserted.⁷

Usually the back is straight, while the edge curves towards the

¹ It is 23.5 cm. long and 6.5 cm. broad; the fore end is abruptly rounded. It recalls Pl. XIX, 4, except that the back shoulder is somewhat rounded and there is no hole for suspension.

² Boas III, p. 409, Fig. 207.

³ The same peculiarity is also seen in the snow knife from North-east Greenland in the Christiania Museum, mentioned on p. 422. This has three holes, each of which (like one of the holes in the specimen figured by Boas) has a groove running from it to the back of the knife. The back at this point has been smoothed so as to afford a surface to which some other object may have been lashed by means of the holes in question.

⁴ Boas III, p. 410, Fig. 208, c—e and p. 411, Fig. 209.

⁵ Loc. cit. p. 42, Fig. 53, a and b.

⁶ Loc. cit. p. 42, Fig. 53 c and p. 413, Fig. 211.

⁷ A knife, of which the wooden haft or, more exactly, reinforcement of wood (attached by lashing) still remains, is figured by SOLBERG Pl. 9, 6; it belongs to the Swedish NATHORST Expedition.

tip (Pl. XXI, 7 and 8); in some, however, the back also curves near the tip, the knife thus tapering to a gently rounded point which lies almost in the middle line of the blade (Plates VIII, 1; IX, 4 and XXI, 3); lastly, there are a few knives of divergent forms, which will be described below.

Usually the back is thick, and the blade increases in thickness from the edge towards the back, a feature most pronounced in Pl. XXI, 7 and 9; some, however, are thickest at the median line, the thickness decreasing both towards the edge and towards the back, which has then a rounded (Pl. XXI, 3), or even quite sharp (Pl. XII, 1 and XXI, 4), edge, so that the knife becomes double-edged, but evidently only the one edge has been used for cutting, the form of the implement being more or less asymmetrical.

L. 3401, from Renskæret, house 130 (Pl. XXI, 1) is of a peculiar shape with highly curved cutting edge and a straight tang, 1·8 cm. long. The tip is missing, and the back is unfinished along its entire length; probably a fracture. The knife is polished only along the cutting edge and on the edge of the tang. The former is so highly curved that had it not been furnished with a tang, it would have been taken for the cutting part of a woman's knife. Length 12·7, extreme breadth 3·4 and extreme thickness 0·9 cm. Material, grey slate.

L. 3550, from Renskæret, house 134 (Pl. XXI, 5) is fragmentary, a small piece from the tip, and a portion, doubtless considerably larger, from the handle end missing. The blade narrows on both sides somewhat abruptly to the handle, the shoulder on the side of the back being deeper and about 1 cm. nearer the point than the other. The knife has been polished on both faces throughout, but not so perfectly as to eliminate all hollows on the surface; the back is rough. The present length of the knife is 8, its extreme breadth 3·6 cm. The knife is thickest (7 mm.) near the median line, where, however, there is no sharp ridge; the back is about 4 mm. thick. Material, reddish slate.

L. 3309, from Maroussia, house 140 (Pl. XXI, 7). Length 12·3, extreme breadth 2·8 cm.; thickest (9 mm.) at the back, which is polished and straight, while the cutting edge, for a distance of 4 cm., curves to the tip. The blade narrows abruptly to the very short handle portion, the shoulder on the side of the back being the deeper, and — unlike all the other specimens — also the more remote from the point; the distance between the shoulders is about 2 cm. The portion behind the back shoulder has been ground rather thin, and at the end is a hole for nailing or lashing; a part of the tang may have been broken off. Material, reddish slate.

L. 3356, from Maroussia, house 144 (Pl. XXI, 4). Present length 13 cm., but a portion, probably considerable, of the fore end is missing. Both back and edge are sharp, and the blade thickens regularly to a marked median ridge; the thickness along this line increases towards the handle, from 7 to 12 mm. Behind the cutting edge a slight shoulder has been ground for the handle, which at the butt end, on this side is furnished with a knob, similar to that on the snow knives. At the back the shoulder is as usual both deeper and nearer the point, in this case more than 3 cm. The edges of the handle are faceted, while its end is plane. The handle portion — reckoned from the base to the shoulder — is on the side of the cutting edge

6.3 cm. long, on the other side 10.5 cm. The blade is 2.6 cm. in extreme breadth, the handle at the middle 2.8, and at the end 3.4 cm. broad. Both faces have been polished throughout, some hollows, however, still remaining. At the hinder end a portion of one face has been split off. Material, reddish slate.

L. 3357. From the same house as the preceding (Pl. XXI, 10). A large and heavy knife, the blade and handle of which merge evenly one into the other. The handle is clumsy and rough, with an expansion at the butt end on the side of the cutting edge; its extreme thickness is up to 1.7 cm. The blade is thickest on the middle line, whence it gradually becomes thinner towards both edge and back; the latter, however, not so sharp as the former. The knife is polished on both faces; the handle end only is rough. Present length 21.5 cm., but the tip is now missing; extreme breadth of the blade 6 cm.; of the handle the minimum breadth is 3.5 cm., the breadth at the end 4.3 cm. Material, red slate with green spots.

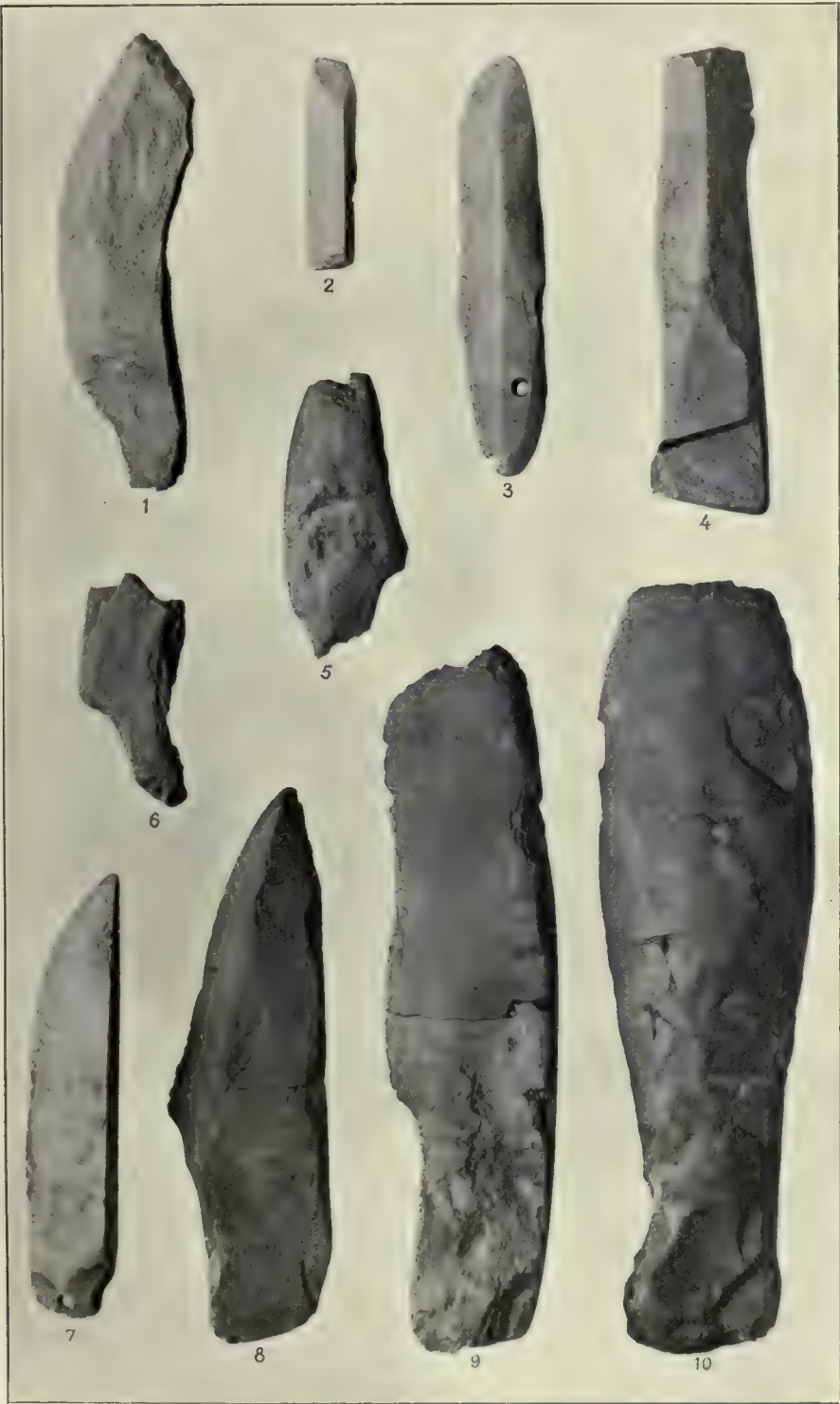
L. 3643, from the east shore of Stormbugt, house 319. Handle portion of a knife; length 3 cm. At the fore end the blade is shouldered on the side of the cutting edge. At the shoulder the breadth is 2.5 cm., while the extreme breadth of the handle portion itself is 1.9 cm, with a thickness of 5 mm. This part is barely 2 cm. long and consequently intended to be furnished with a haft. The butt end is rounded. Polished on both faces and along the edges. Material, green slate.

L. 3787, from Snænæs, house 407 (Pl. XII, 1). Blade and handle portion are not distinctly differentiated, and the knife is broadest (3.5 cm.) at the handle. The cutting edge curves slightly along its entire length; the outline of the back is at its hindmost part slightly concave, but at the tip it curves towards the cutting edge. Both edges are sharp, the blade being thickest (4 mm.) nearer to the back; the polished faces do not meet, however, in a pronounced median ridge. The handle portion is rather thicker than the blade, being 5 mm. thick, and polished fairly flat; the handle end is somewhat rounded. The specimen in question is evidently intended to be furnished with a haft. Length 12.9 cm.; material, greenish slate¹.

L. 3838, from Snænæs, house 407 (Pl. XIII, 14). The cutting edge is almost rectilinear, and slopes along its entire length towards the back; the tip, however, is missing. The handle portion contracts on the edge side, but widens again slightly towards the butt end; on the side edges and on the one face it is rough-hewn, on the other it is roughly polished; the butt end is polished off almost square. The cutting edge has been polished separately for a depth of 9 mm.; from here to the back it is of uniform thickness, 5 mm. The extreme thickness of the handle is 8 mm. Present length of the knife is 8.4 cm., extreme breadth of the blade 3.1 cm., while the handle is 2.5 cm. broad at the middle and 2.6 cm. at the butt end. Material, dark slate.

L. 3047, from Snænæs, grave 422 (Pl. VIII, 1). The blade and handle are distinctly differentiated. At the edge side the handle portion contracts behind the blade, but widens again at the butt end; at this side the handle is only 3.7 cm. long. At the back is — as in Mus. Nos. L. 3356 and 3550 — a shoulder nearer the point, viz. 6.8 cm. from the butt end, which is oblique. The knife is thickest near the back, the thickness increasing towards the handle, where it is up to 6 mm. Both edge and back curve inwards towards the point and

¹ The knife has been broken into four pieces. When received by the Museum, one of these, it is true, was found among the objects obtained from the houses 522 — 524 excavated by MYLIUS ERICHSEN at Rypefjeldet, but these two finds have evidently been mixed during the voyage (cf. p. 403, footnote 1).



meet in a fairly rounded tip. Length 12.6 cm.; maximum breadth of blade 3.1 cm., minimum breadth of handle 1.9 cm., breadth at its butt end 2.1 cm. Material, red slate.

L. 3050, from Snenæs, grave 423 (Pl. IX, 4). A very slender knife. On the side of the edge 5.5 cm. from the butt end, the transition from blade to handle is faintly marked, and at the back they merge evenly one into the other. The extreme thickness occurs near the back along a ridge behind which the back portion has been thinned, and even slightly hollowed down, by grinding. The maximum thickness (8 mm.) occurs in the posterior portion of the blade, whence it diminishes gradually towards both ends; the butt end of the handle, which is rounded, is 4 mm. thick. Length 17.7 cm., extreme breadth 2 cm. Material, red slate.

L. 3916, from Rypefjeldet, house 523 (Pl. XXI, 9). A large and heavy knife. On the edge side, blade and handle are differentiated by a shoulder 7 cm. from the butt end; at the back, which is slightly curved, they merge evenly one into the other. The knife increases gradually in thickness towards the back, where, in the handle portion, it is as much as 1.4 cm. thick. Present length 19.5 cm., but the tip is missing; extreme breadth of the blade 4.9 cm.; breadth of handle 3.5–3.7 cm. Material, dark slate.

L. 3986, from one of the houses 522–524 at Rypefjeldet (Pl. XXI, 8). Broad, but comparatively thin. The outlines of the back and edge are fairly straight and converge throughout their whole length towards the point. The extreme breadth, 4.5 cm., occurs at the transition from blade to handle; thence the handle narrows to 3.1 cm. at its end. Behind the polished face of the edge itself the thickness is fairly uniform, 5–6 mm. The handle, 6.5 cm. long, thins out towards the butt end and terminates in an oblique line. Length 15.4 cm. Material, reddish slate.

L. 3987, from the same locality as the preceding (Pl. XXI, 3). Edge and back curve towards a fairly rounded point. From the median line the knife diminishes in thickness towards the edge and back, without the latter, however, becoming sharp. The shoulders, which are very slight, occur at the cutting edge 4.5, at the back 5.2 cm. from the butt end, which is rounded. Two holes have been drilled in the handle, one at the butt in front of the median line and another behind the median line 2.5 cm. from the butt. Length 11.7 cm.; extreme breadth 2.5 cm. Material, greenish slate.

L. 3988, from the same locality as the two preceding (Pl. XXI, 2). Fragment of the blade of a slender knife, similar to L. 3050. The one end is fractured, at the other (uppermost in the figure) a plane surface is seen, probably polished after a fracture. Length 6 cm., breadth 1.5. Material, light greenish slate.

L. 3970, from Rypefjeldet, house 527. Fragment of the blade of a knife; length 5.3 cm., breadth 3.5 cm.; it increases in thickness towards the back. Material, brownish slate.

L. 3948, from Rypefjeldet, house 528. Fore end of a fairly broad knife-blade; the two edges diverge rather widely. Length 5.5 cm., extreme breadth 3 cm. Material, dark grey slate.

L. 4163, from the spring settlement at Rypefjeldet, tent 624 (Pl. XXI, 6). Fragment of blade and handle of a knife. The constriction for the handle and the back edge have been very roughly hewn, and are partly damaged. Length 6.5 cm., extreme breadth 3 cm. Material dark grey slate.

Knives of this class have also been found previously in North-east Greenland, for instance, a rudely made specimen preserved in

the Christiania Museum¹ and four more finely worked knives, of better shape, brought home by the NATHORST Expedition, all of which have been figured by O. SOLBERG.²

It has been mentioned above that some of the slate knives have a thin handle portion which requires an outer reinforcement. A reinforcement of this class (Mus. No. L. 3444) from Renskæret, house 131, is shown in Fig. 25 *b*. The outer side of the specimen, that seen in the figure, is rounded; at the fore end are notches for lashing the blade, and at the butt end the unilateral knob as found in slate knives cut from the solid. The inner side is flat, the anterior portion has, however, been thinned out, indicating that the length of the tang of the knife, intended to be lashed on has been about 3 cm.; owing to the bad preservation of the haft this cannot, however, be stated with full certainty. The length is 15.9 cm., the breadth 1.7—1.9 cm. except at the knob on the butt end, where it is as much as 2.6 cm. broad; the thickness varies from 5 mm. (at the fore end and at the rear end in front of the knob) to 1 cm. (about 5 cm. from the fore end).



Fig. 25. $\frac{1}{2}$.

Fig. 25 *a* (Mus. No. L. 3575), found in the same settlement as the preceding, house 134, is a fragment of a similar reinforcement for handle, or possibly a fragment of a handle itself. While the previous specimen is rounded on the one face and flat on the other, the present one is similarly flattened on both faces, and the two hollows at the posterior knob have two corresponding hollows on the reverse side, not, however, connecting so as to form holes. Present length 8.9 cm.; it is broadest at the fragmentary fore end (2 cm.) and at the knob (1.9 cm.) and narrowest in front of the latter (1.6 cm.); the thickness is fairly uniform, about 9 mm.

Present length 8.9 cm.; it is broadest at the fragmentary fore end (2 cm.) and at the knob (1.9 cm.) and narrowest in front of the latter (1.6 cm.); the thickness is fairly uniform, about 9 mm.

SOLBERG³ rightly draws attention to the fact that the slate knives are derived from prototypes in European culture; as regards the more well-marked forms the resemblance is so obvious that there is hardly room for doubt, especially when, in addition, the handle is furnished with a wooden reinforcement, a feature which is characteristic of the European iron knives with long broad tangs, for ex-

¹ No. 10280, figured by O. SOLBERG, Pl. 9, 3, length 17.6 cm., found in a grave at about 74° 20' N. lat. SOLBERG is of opinion that this locality is Clavering Island.

² SOLBERG, Pl. 9, 3—7. ³ p. 59.

ample certain table knives. Another feature appears to me to point in the same direction. It has been pointed out above, that in the snow knives of Type I, as regards the shoulders of the blade both towards edge and back, the shoulder on the edge side always occupies a somewhat anterior position, a fact which is due to the Eskimo manner of grasping the knife with the whole hand and drawing it towards the user¹, the knuckles requiring less space than the palm of the hand, which is applied to the edge side. In some of the slate knives, also, there is shoulder not only on the edge side, but also on the back; but here the back shoulder is anterior to the other (cf. especially Pl. VIII, 1 and Pl. XXI, 4). In front of the former shoulder the back is thin, and more or less sharp². I am inclined to connect this with the projection likewise known from the back of the European table knife, behind which the first finger may rest if it is required to exercise pressure, therefore in these knives the posterior portion of the back is thick, while anteriorly it becomes thinner to give elasticity. For the Eskimo, who have a different manner of grasping the knife this is of no practical importance; it appears to have been slavishly transferred from the prototype.

Another knife-form, which so far as I know has not previously been found in North-east Greenland, viz. with blade and handle cut from solid bone, and with a groove in the one edge of the blade for the insertion of the cutting edge, is represented in the collection by two specimens, both from house 133 on Rensskæret.

L. 3535 (Fig. 26 *b*) is 18 cm. long, with a breadth of about 1 cm.; it is thin, the extreme thickness being 8 mm.; it is slightly convex on the one face and flat on the other. The side edges and the fore end are rounded, but the butt end is cut off square. On the hindermost portion, for a distance of 12.5 cm., viz. the length of the handle, the edge on the side of the cutting edge is furnished with 17 small knobs to provide



a *b*
Fig. 26. ²/₃.

¹ Cf. Fig. in MASON IV, p. 736, Fig. 8.

² Knife Mus. No. L. 3309 (Pl. XXI, 7) forms an exception in so far as the projection at its back is posterior to that on the edge, but here the projection evidently serves only to fasten the knife to the handle; moreover, in this specimen the back is thick on its foremost portion and not thin, as in the specimens mentioned.

a firmer grip for the hand; at the butt end a hole has been drilled for the reception of a thong for suspending the knife. The groove for the insertion of the cutting edge is 4 cm. long, 3 mm. deep and 1 mm. broad.

L. 3530 (Fig. 26 a) is broken at the butt end and fragmentary; present length 12 cm. It is of far ruder workmanship than the preceding; both faces are almost flat, the side edges are cut off straight, not rounded, and the fore end also is almost straight. Towards the butt end the blade increases in thickness from 5 to 8 mm.; the handle, the greater part of which is missing, is quite irregular in form, the extreme thickness is 1.1 cm.; along the handle, on the side of the cutting edge, the two faces meet at a sharp angle, but along the blade portion this edge is cut off square to afford sufficient width for the groove in which the cutting edge may be inserted; hence the blade is 1 mm. narrower than the handle, which is 1.6 cm. broad. The groove for the cutting edge is 6 cm. long, its extreme depth is 2 mm. and extreme breadth 1.5 mm.; it is broadest and deepest in the middle.

Knives of this kind are well-known from the other coast of Greenland; JOHN ROSS saw them for instance among the Polar Greenlanders on his visit in 1818¹, here the cutting edge consisted of small iron lamellæ which, according to the natives, were taken from one of three large stones which were afterwards found, and proved to be *aërolites*².

South of Melville Bay also, these knives have been found in rather large numbers, sometimes double-edged, but more frequently single-edged, differing greatly as regards size and length of cutting edge, the latter of which, like that of the Polar-Greenland specimens, may be considerable, so that the implement resembles an European knife, or it may be quite short like that of the Greenland carving knife; the groove is sometimes continuous, sometimes it consists of a row of small incisions for the insertion of small fragments which form a cutting edge; sometimes there is a hole at the tip for nailing on a point. In the National Museum in Copenhagen there are no less than 45 specimens, of which only 12 are double-edged. Here also the cutting edge was often composed of small pieces of iron, but the latter are usually disintegrated, so that only the bone part of the knife is left.

Professor JAPETUS STEENSTRUP was the first to draw attention to these West-Greenland specimens, and pointed out that the iron, to judge from its chemical nature, could not have been of European manufacture, but was a product of the country itself, of telluric or

¹ Ross, pp. 98 and 104.

² Cf. BÖGGILD p. 12; a fourth specimen was found a few years ago by KNUD RASMUSSEN.

meteoric origin.¹ Judging from the conditions existing north of Melville Bay he supposed it to be of meteoric origin, as was also at that time the belief concerning the detached pieces of iron found in West Greenland.

The geologist Dr. K. I. V. STEENSTRUP has since proved the telluric origin of the West-Greenland iron², and at Eqaluit in Umanaq fjord he was so fortunate as to come across a grave with a rich find comprising among other things — for instance men's knives of this kind and women's knives with similarly constructed cutting edge — the material for these edges, viz. nine small balls of telluric iron.³

Since the cutting edges of the knives found by excavation in West Greenland are, as mentioned above, often missing, it is of interest that there are other points which suggest their connection with telluric iron; for instance, the localities in which the latter was found and those in which the knives were discovered correspond very closely. Telluric iron has hitherto been found in the region extending from the district of Umanaq (Eqaluit about $70\frac{1}{2}^{\circ}$ N. lat.) in the north to Jakobshavn ($69^{\circ} 13'$ N. lat.) in the south and on Disco Island further west, moreover, quite isolated far to the south at Fiskernæsset ($63^{\circ} 5'$).⁴ An investigation of the 28 knives of known origin in the National Museum shows that the 24 came from the region between Umanaq in the north and the island Grønne Eyland ($68^{\circ} 51'$) in the south⁵ and that one comes from Fiskernæsset, just the same isolated locality mentioned above where detached pieces of iron have been found. The three other knives have been found further to the north, in the district of Upernivik as far as $73^{\circ} 31'$ (Ivtdliarsuk). Besides the knives mentioned above, eight knives are labelled "North Greenland", precise locality not stated; on the other hand, from the whole of South Greenland there is only the knife from Fiskernæsset.

The cutting edge of the bone knives of West Greenland, in those specimens where it has been preserved, is invariably of iron. As prototype for the cutting edge formed by a series of slightly overlapping iron lamellæ JAP. STEENSTRUP, in the paper cited above, suggests the shark's tooth knife, the large, wooden knife with cutting edge or edges — both single and double-edged specimens occur — made of the row of teeth from the lower jaw of the shark

¹ „Fer natif ou météorique” (cf. JAP. STEENSTRUP, p. 244). ² K. I. V. STEENSTRUP II, pp. 113 et seq. ³ Loc. cit, p. 121 and K. I. V. STEENSTRUP I, p. 23. ⁴ BØGGILD, pp. 11 et seq. ⁵ To these may be added a knife from Hunde Eyland, which is situated at the same latitude as Grønne Eyland mentioned by BØGGILD on p. 25.

inserted in a groove in one or both edges of the wood; like the iron lamellæ, the teeth in the jaw slightly overlap each other. GRAAH¹, who found a knife like these in southern East Greenland, near Malingiset (62° 20' N. lat.), states that there it was used for cutting blubber; at Angmagsalik, from where the type is best known and where it is still prevalent at the present day, its use has become specialized, viz. for cutting the hair of certain individuals who are then also distinguished by peculiarities in their clothing; ordinarily, men wear their hair long.² Ritual employment of an object which was originally an article of use we may be justified in regarding as a testimony of antiquity, and these knives are also mentioned even as early as the middle of the 17th century by OLEARIUS as knives of common use.³ By the end of the century they had probably gone out of use, since, as far I know, they are nowhere mentioned by the EGEDES, and, owing to the perishable material of which they were made, not a single specimen of them occurs in any of the numerous finds belonging to the National Museum in Copenhagen; Professor JAP. STEENSTRUP, on the other hand, in his paper just cited, has figured a fragment of such a knife found in a grave in the northernmost part of Danish West Greenland.⁴

So far as is known, knives edged with shark's teeth, like those with iron lamellæ, constitute a local Greenland type; from the Central Eskimo region, however, a similar large knife, from Southampton Island, is known; but it is edged with rounded pieces of flint fashioned by chipping and inserted in slots along the edges of the knife, which there is made of bone.⁵ Whether flint-edged knives of this type existed in Greenland still remains to be proved by discovery; it is, however, not improbable that certain of the bone knives mentioned above, viz. those which instead of a continuous groove have a row of slots along the edge, like that from Southampton Island, have been edged like the latter; it must be borne in mind that the iron lamellæ are not fixed at intervals, but overlap each other as do the teeth in the jaw of the shark. PORSILD regards the small flakes of chalcedony or agate as cutting edges for knives with grooves, and figures one in which the flakes have been inserted by the direction of a Greenlander

¹ GRAAH I, p. 85, cf. Pl. VIII; II, p. 81—82. The knife found by GRAAH is also figured by W. THALBITZER II, p. 477, Fig. 187 to the right, cf. Medd. om Grønland. vol. LIII, pp. 404—06.

² HOLM I, p. 62; II, p. 32.

³ OLEARIUS, p. 174: „Ihre Messer seind von Backen Zähnen eines Meerfisches, welchen sie Ekulugsua — nennen“.

⁴ JAP. STEENSTRUP, Pl. 25; cf. p. 248. This specimen, together with those by GRAAH and HOLM, is also figured by AD. S. JENSEN: The Selachians of Greenland, p. 16.

⁵ BOAS III, p. 384, Fig. 178.

now living.¹ So long as this hypothesis has not been verified by finds I am inclined to regard it as somewhat doubtful; the only parallel known to me from the Eskimo region, figured by MURDOCH², he himself is inclined to regard as a counterfeit.

The flint-edged knife from Southampton Island must probably be regarded as the prototype of the peculiar Greenland form of knife with iron lamellæ. If, at its introduction into Greenland, knives of shark's teeth had already been in use, it is probable, as maintained by JAPETUS STEENSTRUP, that the overlapping of the lamellæ is an imitation of the more familiar shark-tooth edge. By this arrangement also a more continuous edge was produced, and the long groove which the old knives required was retained.

That the iron-edged knives were intended, as far as possible, to imitate European knives with iron blades is distinctly evident from several of the knife-forms: marked differentiation between a thicker handle and a thinner blade. Sometimes the blade continues in a thin tang furnished with holes for nailing a reinforcement of wood; in others, it is true, the thick handle is cut in one piece with the blade, but on the handle small knobs are carved in imitation of the nails for the reinforcement; lastly, the knife from Fiskernæsset is made in two parts, viz. a blade with a tang and a bone haft with a hollow in the fore end for inserting the tang. In all these features the European influence can hardly be denied.

SOLBERG has rightly pointed out that the double-edged knife is the original form, the single-edged being a later production. As already mentioned, the West Greenland knives with grooves for insertion of the edge occur both as double-edged and single-edged; the latter, however, are in the majority, for instance in the National Museum in Copenhagen there are 33 as against 12; it is probably significant as regards the relation in age of [the two forms that so far as is known no double-edged knife has been found south of the peninsula of Nugsuak, while at least 14 single-edged knives come from districts further south, chiefly from around Disco Bay.

As regards the cutting edge of the two North-east Greenland knives figured in Fig. 26 nothing can be stated; rust does not occur in the grooves, therefore it may be that in these specimens the cutting edges have not been of iron; but even if possibly in these remote regions they were obliged to make do with another material, the connection of the knives with those described from West Greenland is nevertheless unmistakable, and to judge from the above, no very great age should be ascribed to them.

¹ PORSILD I, pp. 621—622, Fig. 7 E; II, p. 196, Fig. 41 E.

² MURDOCH I, p. 160, Fig. 117.

Whetstones and Grinding stones.

That whetstones should occur in great numbers among the material from the Danmark Expedition is not surprising; it is rather a matter for wonder that such should be entirely lacking in collections like AMDRUP's and that of the Germania Expedition. They are not represented in the illustrations given by STOLPE of the NATHORST finds;¹ the only whetstones from North-east Greenland known in the literature up to date are those from RYDER's Expedition, which brought back several specimens.²

Of the 16 whetstones from the Danmark Expedition, 13 are shown in Pl. XXII, 1—13. The five first (1—5) have a round hollow for the fingers scooped out at the ends — a peculiarity likewise found in two of RYDER's³. Notching midway down the narrow side to receive a bearing thong, however, such as is found in RYDER's two, is not found in any of the specimens in the present collection. Where the stone has been intended to be slung, it has hung perpendicularly, as in XXII, 2, 10, 11. No. 10 has, besides a hole at the upper left-hand corner, also a partial bore at the lower end, this latter being, apparently, the first attempt, which was relinquished, as the stone at this part would have split if it were continued. The unfinished boring of No. 11 is doubtless due to the same consideration; this specimen was, when received, split completely through lengthwise; the lower portion is lacking. In its original form it must have been not a little longer, and, with its thickness of 2·3 cm., considerably heavier than any of the others in 1—11, which vary from 6—10 cm. in length, and 0·6—1·4 in thickness, the majority being less than 0·8 thick. The breadth, which is more variable, does not in any case exceed 3·5 cm.

The whetstones shown under 1—11 have, although differing as regards the degree of careful workmanship, certain characteristics in common; all are fashioned from some kind of slate, are oblong, narrow, fairly flat, and with at least some attempt at shaping. Nos. 12 and 13, on the other hand, both fragments, are but roughly formed, almost square in section, and very little shaped. The smaller one, which has been used from several sides, measures from side to side $2·3 \times 2·4$ cm., the larger, measuring up to $5·2 \times 3$ cm., has the whetting surface on one of the narrow sides. The stones of the former class would have been used for whetting the edge of slate knives; of the latter, one at least, which is of a harder stone, has doubtless been intended for rougher use, possibly for grinding down the ma-

¹ Internationaler Amerikanisten Kongress, 14. Tagung. Stuttgart 1906.

p. 332. ² Loc. cit. Fig. 30.

³ RYDER I,



terial used in making the implements; it shows evident traces of hard wear, the grinding surface being hollowed out.

Of the specimens shown, Nos. 1—4, 6, 11 and 12 are from Rypefjeldet; 1—3, 11 and 6 (L. 3992—96) being from the houses 522—24, No. 4 (L. 3953) from house 528¹ and 12 (L. 3973) from house 527. Nos. 5 and 7, (L. 3470 and 3428) are from Renskæret, houses 132 and 131. No. 8 (L. 3840) is from the camping ground 376—91 at Stormnæs.² Nos. 9—10 (L. 3642 and 3647) are from the winter houses on the east shore of Stormbugt³; 9 was found in house 319. No. 13 (L. 3387) lastly was found at Cape Bismarck.

Axes.

The Eskimo axe is of the transverse or adze type, the direction of the edge lying at right angles to the handle. So firmly is this system adhered to, that we may find iron axe-heads of the ordinary European type, with longitudinal socket, fixed by the Eskimos at right angles to the haft.⁴ In West Greenland, a carpenter's chisel is generally used to replace the original native blade.

The blade was generally of bone, with a stone edge set in a groove at the fore end, the axe thus consisting of three parts; haft, blade and edge. The blade and edge can, however, be fashioned in one piece, either of stone⁵ or of bone⁶.

Mention has already been made⁷ of two axe-heads from Eskimonæsset (Pl. X, 10—11) of which the one (Pl. X, 11) is made entirely of bone, with no particular adaptation for attachment to the haft, beyond a slight roughening of the surface midway down the back. The other is of the type more commonly found, grooved in front for insertion of an edge, narrowed down laterally, and flattened on the underside for lashing to the haft, the blade being invariably laid directly against the end of the haft and lashed fast.

From West Greenland, we have from older times axe-heads

¹ In this house was found another whetstone (L. 3952), flat, irregular, almost triangular in shape.

² At the same place, under a stone at "the wolf trap" (Cf. THOSTRUP p. 275) was found a stone (L. 3841) quadrilateral in section, with faces clearly intended for rubbing down or grinding 7.1 × 4.9 cm., 3.6 cm. thick.

³ From the same locality (Tent 330) is also L. 3685, 6.7 cm. long, 2 cm. broad.

⁴ Cf. MURDOCH I, p. 165—166, Fig. 128—129. At Point Barrow, however, pickaxes are also found, (p. 303, Fig. 304) hardly without European influence.

⁵ Only among the Western Eskimos: NELSON Pl. XXXIX 3, 11, 13; MURDOCH I, p. 168, Fig. 132.

⁶ MURDOCH I, p. 172, Fig. 142; BOAS III, p. 71, Fig. 92 and p. 416, Fig. 214.

⁷ Cf. pp. 372—73.

made entirely of bone, and others of bone with a stone edge. Three specimens of the latter type are preserved in the National Museum, two of them are shown by SOLBERG.¹

In North-east Greenland, heads grooved for insertion of an edge have been found by RYDER at Scoresby Sound², and by AMDRUP at Dunholm³. The method of shaping for attachment to the haft varies; the sides may be narrowed, when the thongs would be carried round the headpiece, as in Pl. X, 10 and in the case of the specimen from Dunholm, or holes may be bored in several parts of the head, through which the lashings are passed. Where the head is broader than the haft, the holes are bored vertically through the headpiece as it lies⁴; with a narrower head, on the other hand, the holes run horizontally from one lateral edge to the other⁵.

The axe-head shown by RYDER, in his Fig. 24 c, where the boring runs horizontally, is a little, slender piece, which can only have been used for delicate work; it measures 13.8 cm. long, 2.5–3 cm. broad and up to 1.9 cm. thick, with three holes. With this may be compared two specimens brought home by the Danmark Expedition (Pl. XVIII, 9–10). In appearance, they mostly resemble knife-handles, but have two holes pierced through for thongs, and are flattened on one of the broader sides, that lying against the haft. They are slightly rounded off in front, and have a narrow groove there, whereas the hinder end forms a flat surface, drilled off. Both were found on the camping ground on the east shore of Stormbugt.

L. 3683 (Pl. XVIII, 9) was found between tents 328–30. It is 11.5 cm. long; at the middle 2.5 × 2 cm. thick. The breadth is somewhat greater at the fore end, owing to the natural shape of the bone; the one broad side is flat, with 8 grooves as traces of its having been drilled off from the material. At the hinder end, one of the lateral edges has been narrowed by drilling for a length of 3.5 cm., the blade having evidently been too broad for the haft. As regards the holes, the foremost of these was made at one drilling, the hindmost, however, which lies close behind, is bored twice. The groove in the fore end is rectangular, 1 cm. long and deep, 3 mm. in width. The specimen was much overgrown with lichen.

L. 3712 (Pl. XVIII, 10) is from one of the tents 341–344. It is 12 cm. long, and fashioned from a piece of reindeer antler. The breadth increases towards

¹ SOLBERG Pl. 7; the third, Mus. No. L. 5651, was subsequently received. The blade of an axe, but without stone edge, from PFAFF's Collection at Stockholm Museum is shown by THALBITZER (I, Fig. 100); the two other specimens, shown as axe heads, (Fig. 101 and 102) are heads of whaling harpoons.

² RYDER I, p. 325. Fig. 24, a–c.

³ THALBITZER I, p. 449.

⁴ RYDER I, Fig. 24 a.

⁵ Loc. cit. Fig. 24 c (Mus. No. L. c. 1481, from Cape Stewart). All three methods are likewise employed in West Greenland; two are shown in SOLBERG Pl. 7.

the hinder end, from 2.4 to 3.3 cm. according to the natural form of the horn; thickness at the middle 2.5 cm. About 2 cm. from the fore end it thins down evenly from both broad sides. At the hinder end, a layer 3 mm. thick has been removed by boring from the lower broad side for a length of 5.5 cm., for fitting on the haft. The transverse holes are both slightly oblong in section; the distance from centre to centre is about 2 cm. The hinder end is hollow as far as the foremost hole; this is however, doubtless due merely to dissolution of the inner tissue. The hole on the fore end is about 1 cm. \times 6 mm. at the edge, decreasing downwards, and running to a circular termination at a depth of 2.8 cm.



Fig. 27. $\frac{1}{2}$.

NATHORST shows a specimen, which as far as can be judged from the illustration, is of the same sort¹. It appears to have been bored through transversely, and is, like L. 3683, narrowed at the one edge; in common with this, it has, moreover, also the flat surface with grooves, this lying, however, here about the middle of the piece. At the fore end "a chisel-like piece of iron" is preserved.

Beyond doubt also, the two specimens from the east shore of Stormbugt have had iron cutting edges; this is evident from the smallness of the groove, and in the case of L. 3712, also from its shape. Direct evidence, however, there is none, no trace of the edge remaining.

Of axe-hafts, two were found, both of wood (Figs. 27—28). They are broad at the upper end, terminating there in a flat surface to receive the head; this surface is, as is usually the case, somewhat oblique,

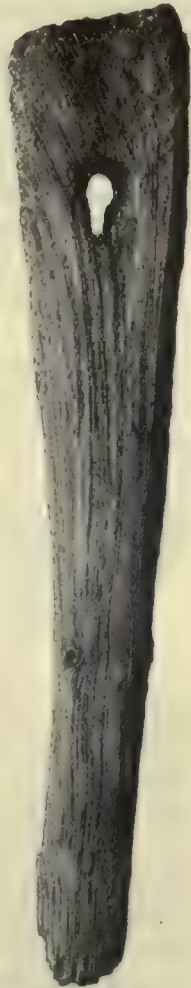


Fig. 28. $\frac{1}{2}$.

so that the blade of the axe would form an acute angle with the haft. A little lower down on the haft a hole has been bored to take the thongs used for lashing on the head.

L. 3502, Renskæret, house 132 (Fig. 27) 24 cm. long. The joining surface 4×2.3 cm. The hole about 2.5 cm. distant from the upper end; at the lower end, the haft curves in towards the edge side, terminating in a round knob.

¹ NATHORST, p. 347, Fig. b. The specimen itself I have not seen.

² Cf. *inter alia* BOAS III, p. 71, Fig. 92 and p. 415, Fig. 213.

L. 3605, Renskæret, specimen found lying in the open, at the settlement 126—139 (Fig. 28), 25 cm. long, but broken off at the lower end. Joining surface is 4.5×3.5 cm., the hole 4 cm. from the upper end.

This type of axe-haft, with evenly curved lines and knob at the holding end, is common both in Greenland and among the Central Eskimos, as also to some extent among the Western Eskimos; here however, it is as a rule more roughly shaped, and often with a projection above behind the joining surface.¹

Drills.

A complete set of drilling tools: mouthpiece, shaft, bits, and bow, is not found in the collection; in the following, therefore, each part will be dealt with separately.

Of the bone mouthpieces, which are held in the teeth to guide the upper end of the shaft, two specimens were found: one at Syttenkilometernæsset, and the other on the island of Maroussia.

L. 3188, (Fig. 29) was found at Syttenkilometernæsset, camping ground 73—103. Fashioned from the bone of a whale; height 3.6 cm.

The shape is compressed, only 2.2 cm. thick, while the breadth of the larger, clean-cut surface amounts to 6 cm. From this the sides are rounded down in such a manner as to leave, on what is shown in the illustration as the under surface, just sufficient room for the socket intended to receive the upper end of the drill-shaft. This socket is 1.7 cm. deep. In addition to this, there is also a hollow, not so deep (9 mm.) in the upper surface. The mouthpiece shows signs of hard wear; an oblong groove, worn away by the teeth, is visible about the middle on either side.

L. 3364 (Fig. 30), found in house 144 on the island of Maroussia, is of a different shape, fashioned from a piece of narwhal's tusk, cut off straight at both ends. The socket, which is only 6 mm. deep, is here found in the broader end. Height 4.5 cm., upper surface 4×2.9 , lower 4.2×3.5 .

A wooden drill-shaft was found in house 134 on Renskæret (Fig. 31). L. 3572, 11.4 cm. long, is somewhat roughly fashioned from a round stick. The narrowed portion at the upper end shows the corresponding socket of the mouthpiece used to have been 1.1 cm. deep. The greatest thickness of the shaft is at 2.2 cm. from the upper end, where the wood is 1.6 cm. thick; from here it

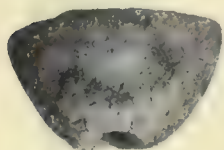


Fig. 29. $\frac{1}{2}$.



Fig. 30. $\frac{1}{2}$.

¹ Cf. NELSON, Pl. XXXIII b and XXXIX; also MURDOCH I, p. 168 et seqq.

tapers down towards the point, where it is 9 mm. The bit belonging to this drill is not preserved, but must, judging from the smallness of the socket into which it fitted, have been of iron, whereas all the bits brought home by the expedition were either of bone or stone.

The most characteristic, and best-preserved, of the bits found, is that shown in Pl. XIV, 18, (L. 3949). This specimen was found at house 528, Rypefjeldet; it is 5.9 cm. long, and made of a greyish slate. The hinder portion, for a length of 3.3 cm., forms a tang, about 1.3 cm. broad, tapering down towards the rear, so as to fit into a cleft shaft. The forepart narrows down evenly towards the point, the point itself being only about 4 mm. long, ground down from different sides, the facets meeting in an obtuse angle. The whole piece, with the exception of the lateral edges of the tang, is ground smooth; its maximal thickness is 6 mm.

Of the same type is the specimen shown in Pl. XIV, 19, from house 132 on Renskæret (L. 3471). This is made of slate, the outer layers of which have flaked off, until the piece is now quite thin. Length 4 cm., breadth of tang 1.5.

In the same house was found the bit Pl. XIV, 17, 5.7 cm. long, formed from the wall of a hollow bone. The tang, which is only up to 8 mm. broad, is here, as in the case of L. 3949, tapered down behind so as to fit more closely into the cleft of the shaft (L. 3492).

L. 3403 from Renskæret, house 130, of dark green slate, 3.3 cm. long, is, like the foregoing, provided with a tang for hafting, but the forepart is much shorter. A far rougher tool is the one shown in Pl. XIII, 9 from house 406 at Snenæs (L. 3794). It is fashioned of slate; only the forepart and the lateral edges are ground, the sides of the tang being left rough. Length in present state about 6.6 cm., the extreme point being broken off. Breadth up to 2.1 cm., and thickness close on 9 mm. at the part where the tang passes over into the point. The tang, however, tapers evenly down towards the hinder end, suggesting that this piece also, albeit but roughly shaped, was intended for fitting into a shaft.

In the neighbouring house, Snenæs 407, the slate bit shown in Pl. XIII, 13 was found. The point itself is short; the tang, 1.2 cm. broad, which is broken off at the hinder end, is irregularly shaped, thin at one edge and thick at the other, and does not appear to have been intended for fitting to a drill-shaft, but to be used by hand, and is thus perhaps rather an awl, or possibly a bodkin, than a drill-bit (L. 3839).

The fragmentary state of the last-mentioned specimen renders it



Fig. 31.
1/2.

a matter of doubt whether it was intended for use with a shaft or not; in the case of the next, however, Pl. XIV, 20, (L. 3989), we have evidently to deal with a hand tool, both ends being here pointed, though differing in thickness. The middle portion, or grip, which is 9 mm. broad, is rather rhomboid in section; the length of the whole piece is 4.5 cm. This double-ended tool is, like the first mentioned, finely shaped; it is made of green slate, and was found in one of the houses 522—24 at the winter settlement at Rypefjeldet.

The drill, which had also to perform the functions of a saw, is one of the most important implements which the Eskimos possess, and pieces of bone which have been cut through transversely or longitudinally by this means are extremely numerous among the finds made. Pl. XX, 3—6¹ shows some characteristic instances of this: a hollow bone, laid open to the marrow by a series of drilled holes (3), a reindeer antler, from one end of which a strip has been removed by splitting and then boring transversely through (4); another reindeer antler split lengthwise (5), and one cut off by transverse boring (6).

From several of the finished tools likewise we can learn the manner of working with the drill in bone, ivory, slate and wood. In the case of slate or ivory, the drilling must be done from both sides, owing to the danger of splitting. In addition to single holes, it may also be used for cutting the slit for the insertion of the blade in harpoon heads, and for the line grooves of the same (Fig. 4) or of buckles for harness (Pl. XIII, 12). In the spliced parts of compound wooden bows, a hole is bored where the point of the splice is to reach, in order to prevent the knife from splitting the wood too far down (Pl. XVIII, 5).

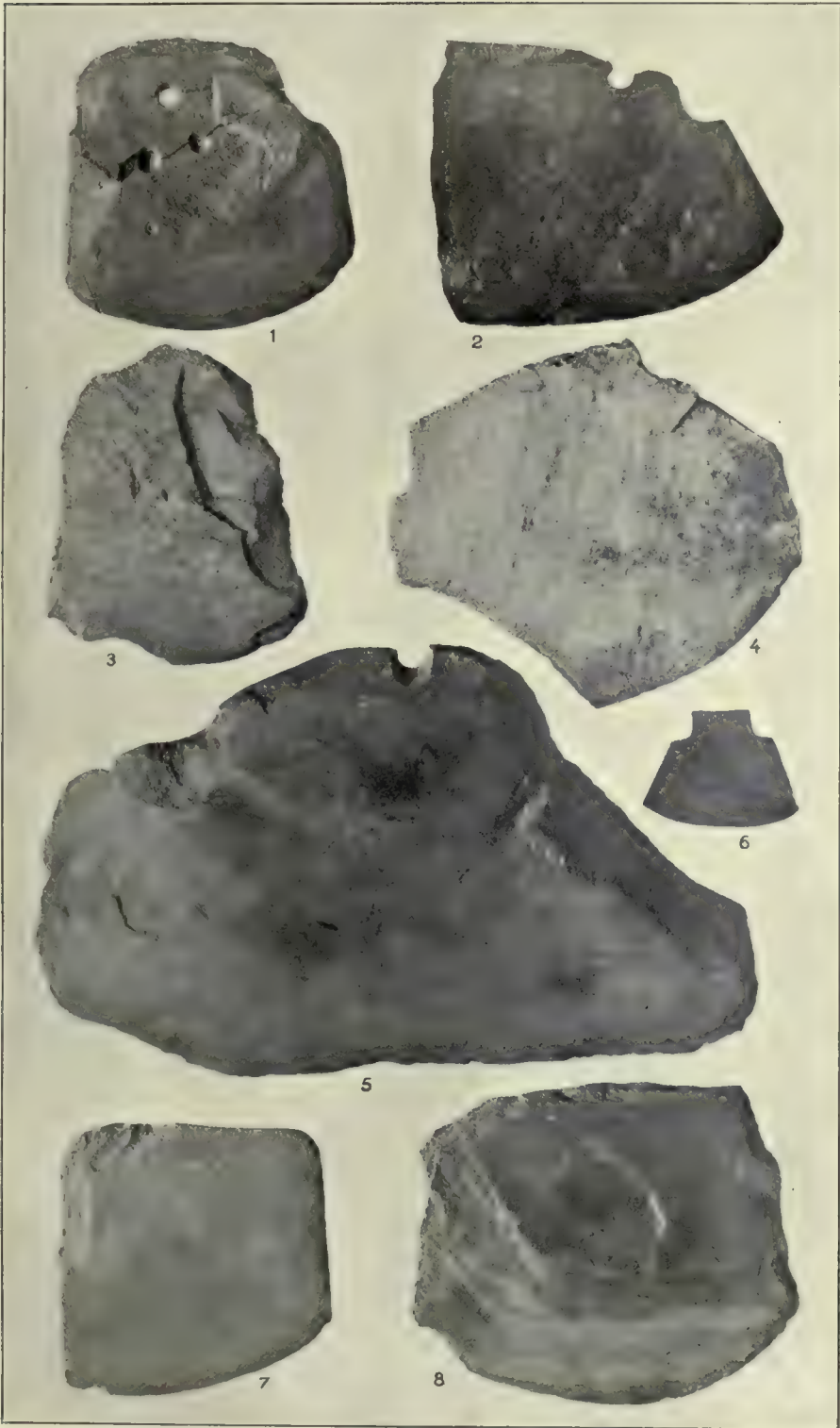
Women's Knives.

The slate blade of the well-known curved-edged woman's knife, or "Ulo" is, as already pointed out by SOLBERG², a highly variable item, both as regards shape and size. The present collection includes specimens ranging in size from 3.4 to 15.5 cm., and from a thickness of only 2 mm. to that of the heavy blades measuring 1.6 cm. across the back.

In the thinner, more carefully fashioned knives, there is on the upper edge, or back, of the blade a sharply defined portion, generally rectangular in shape, designed to serve as a tang for the handle (Pl. XXIII, 6). In two cases (Pl. VII, 11 and XII, 16) it is rounded, and would then presumably have served as a handle in itself³. Con-

¹ Mus. Nos. L. 3680, 3967, 3997 and 3601 respectively. ² SOLBERG p. 54—55.

³ Cf. one of the knives from the NATHORST Expedition (SOLBERG p. 55, Fig. 47).



siderable difference is also observable in various details, such as the curve of the cutting edge, and the greater or lesser divergence of the lateral edges. The blade may be furnished with holes for lashing to the handle, or may lack these, albeit this last need not necessarily indicate that the blade has been used without any handle at all.

Knives with tang or handle.

L. 3784. Snenæs, house 406 (Pl. XII, 16) 12.4 cm. long, 8 cm. high with highly curved edge and widely diverging lateral edges. The grip, which is 3.2 cm. long, is rounded on its upper part, and has possibly been held directly in the hand without any protecting handle. Maximal thickness 5 mm. Greyish-green slate.

L. 3785. Same house, (Pl. XII, 18) 12.3 cm. long, 6.8 cm. high. Lateral edges here, as in previous specimen, widely divergent, but cutting edge less curved. Tang partly broken off. About 1.5 cm. from the back are two holes for lashing to a handle. Greatest thickness 4 mm. Same greyish-green slate.

L. 3786. Same house (Pl. XII, 17). Defective. Height 4.8 cm. The tang, which is 3.7 cm. long, is somewhat rounded above; two holes, about 2 cm. from upper edge of blade show that a handle has been used. Greatest thickness 5 mm. The lateral edge preserved forms a very acute angle with the slightly curving cutting edge. At the other end the fracture has been partly ground, showing that the knife must have been in use after the portion now missing, with half of the one lashing hole, had been broken off. Same slate as the two previous specimens.

L. 3869. Snenæs, house 398 (Pl. XXIII, 4). Defective. Height 7.5 cm., greatest thickness 4 mm. The grip-tang, which in the illustration is placed somewhat obliquely, is 5.7 cm. long. No lashing holes. Ground only at the edge, the remaining surface rough, this being, however, doubtless due to flaking off. Grey slate.

L. 3523. Rensskæret, house 133 (Pl. XXIII, 2). Defective. Height 6.1 cm. greatest thickness 5 mm. Divergence of lateral edges about the same as in previous specimen, but length considerably greater in proportion to height. The end preserved shows part of a tang. A hole for fastening to handle is situated near the top of the fragment; in all probability, the blade must originally have been higher. The concavity noticeable a little lower down would probably have been made later, after the original tang had been broken off. The surface is only slightly ground, except at the cutting edge and the grip, where several longitudinal scratches are visible, and also on the lateral edges. Dark grey slate.

L. 3525. Same house (Pl. XXIII, 6). A delicate little knife, made of grey slate, 3.3 cm. long, 2.5 cm. broad, and up to 2 mm. thick. Only grip and edge are much ground, especially the one side of the latter.

L. 3547. Rensskæret, house 134 (Pl. XXIII, 1). Lateral edges but slightly divergent, almost parallel. Hole in middle of tang for lashing. About 1 cm. farther in, two holes have been commenced, one of them from both sides. Probably the slate broke at this stage, and was discarded; The very superficial boring nearer the edge doubtless indicated a last fruitless attempt to utilise the piece. Length and height 6.3 cm., greatest thickness 6 mm. This specimen, like the previous ones, is only partially ground. Greyish-black slate.

L. 3063. Rypefjeldet, grave deposit 530, belonging to grave 529 (Pl. VII, 11). A delicate little knife of greenish slate, edge fairly curved, and lateral edges greatly

diverging. The tang, which is thus quite small, is rounded, and has probably served as a handle in itself. Length 4.6 cm., breadth 3.3 cm., greatest thickness 3 mm.

No special grip or tang.

L. 3067. From same grave as previous specimen. Knife with wooden handle preserved (Pl. VII, 10). Edge of the blade fairly straight, the lateral edges, which fall obliquely, are roughly cut, the upper edge and surfaces, however, being fully ground. The part hidden by the handle shows smooth worn marks of friction by use. A little below this portion are two lashing holes, 3.8 cm. apart. The corresponding holes in the handle lie 5.2 cm. apart, so that the lashing thongs, which were carried in grooves to leave a level surface for the hand, would have been drawn obliquely through. The blade is 7.4 cm. long, 4.3 cm. high, and up to 9 mm. thick. The handle is cut off straight at the bottom, the upper edge, which is longer and thicker, being slightly curved. The groove for the blade is about 8 mm. wide at the mouth, decreasing in width towards its bottom, which lies 1.5 cm. deep at the middle. Greatest length of handle 8.5, height 3.3 cm., greatest thickness 2.1 cm.

L. 3950. Rypefjeldet, house 528 (Pl. XXIII, 8). Edge fairly curved, lateral edges almost at right angles to back, and are, like the latter, only very roughly cut, whereas the surfaces are ground. 8.3 cm. long, 6.9 high, and up to 6 mm. thick. Dark, reddish—grey slate.

L. 3951. Same house as foregoing (Pl. XXIII, 7). Resembles previous specimen both in shape and material. Judging from the edge, the blade must originally have been longer towards the one end, and must in such case have been reshaped after breakage, the lateral edge at this end being now straight, and parallel with the other. 5.8 cm. high, and now of same length; greatest thickness 8 mm.

L. 4116. Rypefjeldet, shelter 566. Only the cutting edge is ground, the others irregular; the specimen is possibly defective. 5.5 cm. long, 3.7 cm. high, and up to 5 mm. thick. Dark grey slate.

L. 3633. East shore of Stormbugt, house 314 (Pl. XXIII, 5). Large, thick and irregularly shaped. Both surfaces, however, are ground, and the upper part, which has been set in a handle, thinned down by hollow grinding one side; there is a hole here for the lashing. The edge fairly straight. 15.3 cm. long, 9 cm. high, and up to 1.6 mm. thick. Dark grey slate.

L. 3793. Snenæs, house 406 (Pl. XXIII, 3). High and narrow, lateral edges steep. Only the cutting edge ground, otherwise but roughly fashioned. 5.6 cm. long, 6.9 cm. high, up to 7 mm. thick. Dark bluish—grey slate.

L. 3836. Snenæs, house 407 (Pl. XII, 15). Besides the cutting edge, only parts of the surfaces are ground, where marked irregularities had to be removed. In contrast to the previous specimen, the lateral edges run sharply towards the top, giving an almost triangular shape. 9 cm. long, 7.2 cm. high, greatest thickness 1.2 cm. Same material as previous specimen.

To this series of knives should possibly be added — besides some small fragments — the doubtful specimen shown in Fig. 32, which must presumably be taken as a preliminary stage; it has not been ground at all. The specimen in question (L. 4200) which is 11.6 cm. long, 5.5 cm. high, and up to 1.4 cm. thick, is of dark bluish-grey slate, and was found in the stone-oval 496 on the western hunting-ground at Sælsøen.

Only one of the knives here mentioned had the handle still preserved.¹ Two other handles, both of wood, were found without blades.

One of these (L. 3213), from Syttenkilometernæsset, Fig. 33 *a*, is of the usual shape; upper edge thick (2 cm.) and longer than the lower, in which the groove for the blade is cut. The upper edge is 7.6 cm. long, the lower 5.5, height 3.6 cm. The groove, which is 4 mm. deep, runs the whole length of the lower edge. In the upper edge, there is a hole in the middle, and another at one end; these have, however, nothing to do with the present purpose of the piece, one of them having been cut through when the wood was severed off to be used for a knife handle.

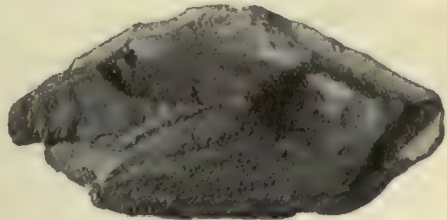


Fig. 32. 1/2.

The same type is seen again in the handles from the grave at Rypefjeldet (Pl. VII, 10) and at Cape Franklin (SOLBERG p. 55, Fig. 46)

save that in these, there are holes for lashing the blade into the handle, whereas in the present specimen, the two parts needed no lashing to hold them together.

The other handle piece (L. 3986) from house 527 at Rypefjeldet (Fig. 33 *b*) is of a different form. It is roughly and carelessly fashioned from a casual find, a bit of stick in places charred by fire; evidently, it can only have been intended to serve some temporary purpose in an emergency. The original shape



a



b

Fig. 33. 2/3.

of the stick is still in the main preserved; it is thicker at one end than at the other, and only the upper surface has been smoothed to any extent. The groove for the blade is but 3 cm. long, the length of the handle being 7.2. In each of the vertical sides two grooves have been cut to take the lashings for the blade. The height of the piece is only 1.4—1.8, and thickness 1.7—1.8 cm.

In the foregoing treatment of the Ulo are included all specimens falling under this class in regard to shape, without regard to possible differences in the use for which intended. SOLBERG correctly ob-

¹ Mus. No. L. 3067; cf. p. 442.

serves that the women's knives, which in West Greenland are employed for manifold purposes, in North-east Greenland exhibit a tendency to group themselves as several different implements, of varying degrees of size and fineness. There are large rough knives, such as are used in the western Eskimo region for fish knives, small slight tools which can doubtless only have been applied to needlework, and blunt-edged skinscrapers¹. In the case of archæological material, however, where the use of an implement is only to be learned from the object itself, it will nevertheless be necessary to range such related forms together.

Scrapers.

The foregoing section was devoted to the consideration of knives classed by reason of their shape under the Ulo type, without regard to the possibility of their having been used for scraping; the following pages deal solely with implements intended as scrapers and for nothing else.

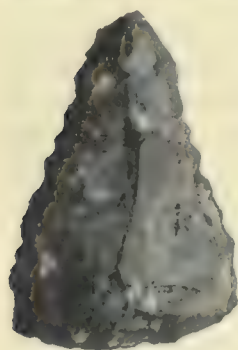


Fig. 34. ²/₃.

At Rypefjeldet, on a gravel bank extending east of the eastern group of winter houses (521)², the scraper shown in Fig. 34 (L. 4076) was found. It is of a light brown flint, with white spots, 6.6 cm. long and 4.5 cm. broad. This is a considerable size for a scraper as Greenland scrapers go; most of those from West Greenland are far smaller, only a few reaching these dimensions. With regard to the distribution of the convex edged scraper, the reader is referred to SOLBERG's observations, which are based upon careful studies of museum material.³ The present specimen

is of particular interest from the fact of its having been found in North-east Greenland, from which region only one other example is known, and that much smaller.⁴

Another type of scraper is shown in Fig. 35 (L. 4153). This was, like the last, found at Rypefjeldet, but at the spring settlement, tent ring 619.⁵ It is fashioned from part of the sheath of a musk-ox horn, one wall of which has been cut away. It is cut off straight at the upper or grip end, the lower end, or edge, being rounded. This specimen closely resembles the bone implements used by the natives at Cumberland Sound for scraping the fat from skins⁶; similar ones are also used by the Polar Green-



Fig. 35. ²/₃.

¹ The last are, however, already partially separated in West Greenland, cf. PORSILD II, p. 207. ² THOSTRUP, pp. 300 et seq. ³ Cf. SOLBERG, p. 30. ⁴ RYDER I, Fig. 31 a. ⁵ THOSTRUP, pp. 315 et seq. ⁶ BOAS III, p. 33, Fig. 40.

landers, where they serve, among other purposes, that of softening boot soles.¹

The object shown in Pl. XXVI, 5, must doubtless also be regarded as the handle of a scraper. It was found in house 132 on Renskæret, and is formed from the radius bone of a bear. Midway down one edge a groove is cut, 11.5 cm. long, about 1 cm. wide, and over 2 cm. deep, evidently intended for the insertion of a stone blade. The handle itself is 24.5 cm. long, thus leaving room for the hands on either side of the blade. This implement, with stone blade, is used by the Chukchees² and the Eskimos of Bristol Bay, Alaska.³

I myself know of no nearer locality where two-handed scrapers with inserted blade have been found. GUDMUND HATT, in his instructive work on the fur clothing of the Arctic, in some observations on the two-handed scraper in general, states that it is found in Northern Eurasia, from Lapland to Bering Straits, and among many tribes of Indians in North America, but is altogether unknown among the Eskimos⁴; this last remark, however, can hardly be correct. The implement used by the Eskimo on the west coast of Hudson Bay for cleaning the inner side of skins, and fashioned from the split leg bone of the caribou, must doubtless be regarded as a two-handed scraper.⁵ And implements more or less similar have previously been brought home from North-east Greenland, without precise statement as to locality.⁶ The scrapers shown by NELSON (Pl. L, 14 and 16), from the Eskimo of Bering Strait, should, by their form, apparently also have been intended for use with both hands⁷, as also MASON's specimen from the Eskimo of Mission, Alaska.⁸ Among the Point Barrow Eskimo, on the other hand, the two-handed scraper is, according to MURDOCH, unknown.⁹

From the whole west coast of Greenland, however, which was discovered far earlier and has been far better investigated, we have in our museum not one specimen of this implement, and from the east coast itself the item from Renskæret is the first of this kind, the locality of which is stated with any certainty.

¹ STEENSBY III, p. 336, Fig. 26. ² BOGORAS, Fig. 144 a. ³ MASON III, Pl. LXXXVIII, 2.

⁴ HATT, p. 24. ⁵ BOAS III, p. 91, Fig. 132. ⁶ From the AMDRUP Exped. two specimens, but only the one entire; from RYDER's Exped. 1 spec. ⁷ NELSON, p. 118, cf. p. 116. ⁸ MASON III, Pl. LXXXIV, 3. ⁹ MURDOCH I, p. 298.

Household Utensils.

Of lamps, the collection contains two perfectly preserved specimens (Pl. XXIV, 1—2) of uniform shape, heavy, broad, with rounded fore edge and evenly curved in section, with no sharp edges. Pl. XXIV, 1 (L. 3765), from house 406 at Snenæs, is 24.5×15.5 cm. The other, larger specimen (L. 3646), from the winter houses on the east shore of Stormbugt, measures 30×20 .

The same proportion between breadth and length, about 2:3, is seen in a lamp found by the NATHORST Expedition;¹ a similar, still clumsier form is also found in a specimen preserved in the Christiana Museum, from a settlement in a fjord about $74^{\circ} 20'$.² The specimen from the RYDER Expedition, on the other hand, which was found farther south, at Scoresby Sound, is of a more slender type, 43×21 cm., with no rim at the fore edge. The broad, rounded form which distinguishes lamps XXIV, 1—2 is found again in one brought home by HAYES from Smith Sound,³ and the same type, although in a lower and flatter form, is still in use among the tribe,⁴ though another sort, slender and sharper edged, is now more common.⁵

I do not propose, however, here to make any attempt at tracing connection with other regions on the basis of different lamp types; this would doubtless prove misleading. The shape of a lamp is without doubt largely dependent upon the material available, and the tools with which it is fashioned. To PORSILD belongs the honour of having, in his studies on the material culture of the Eskimo in West Greenland,⁶ taken the technical features as the foundation of his investigations; this is evidently a factor which should not be overlooked, yet which hitherto has frequently been neglected. A thorough study of the technical methods now in vogue among the Eskimos of Greenland in different spheres of work is a gratifying

¹ STOLPE, Pl. III, Fig. 10. ² Mus. No. 10040. ³ HOUGH, Pl. 5, 2. ⁴ A lamp in the National Museum (L. 4237), brought home in 1909, measures 57×35 cm.

⁵ HOUGH, Pl. 6, 2. A specimen of this type in the National Museum (L. 4238) measures 50×23.5 cm. ⁶ PORSILD II.

task for a scientist residing in the country, and able to confirm the correctness of his observations to a far greater degree than one making but a short stay. On the other hand, it must be borne in mind that there are certain features to be considered besides the technical side; most implements acquire more or less the peculiar stamp of locality as preserved among the tribe, and exhibit, apart from individual peculiarities, a certain style of their own. And when the author in places appears altogether to deny the existence of particular forms, this is doubtless beyond the mark. Even in the case of an item so greatly varying in form as the lamp, it seems to me too strong an expression when he says, referring to the 14 types shown by WALTER HOUGH in Pl. 24 of the previously mentioned work: "There is, however, in these typical forms, not a single one, with the exception of the form from St.-Lawrence, which might not just as well be from West Greenland".¹

In West Greenland, and on the southern East Coast the lamp is set on the tripod, with a heavy plate hollowed to receive the blubber which oozes out.² Among the Polar Greenlanders at Smith Sound, on the other hand, no tripod is used, the lamp being placed instead on three smaller stones, between which a piece of skin is laid out to take the droppings. In North-east Greenland, as far as my knowledge goes, only one such drip-bowl for a lamp has been found, viz; that brought by RYDER from Scoresby Sound; it is a flat, hollowed block as those from Angmagsalik, but roughly worked, and not intended for placing on a tripod.³

¹ Loc. cit., p. 219. The forms as those shown under Nos. 1, 12 and 13 in the Pl. mentioned could hardly, in my opinion, occur in Greenland. It is not unnatural for one studying the implements of a single locality in particular to acquire a marked keenness of perception for such differences as there occur, whereas one having to deal with an extensive material from different regions will be more inclined to note the common features which link up separate items to a type. Here the museum investigator has an advantage over one constrained to make his comparisons through the medium of literature. On glancing for instance at the five Ulos (2—6) shown by PORSILD after HOLM, it must be admitted that the student would, if without further guidance, be somewhat at a loss; HOLM's text, however, indicates 4—6 as the typical specimens, 2 and 3 being separate items. With regard to the former of these two, it is expressly stated that this has been imported from the West, and it is doubtless owing to the fact that only the Danish text of the work had then been published, that the specimen in question came to be included in MASON's collection of types under East Greenland.

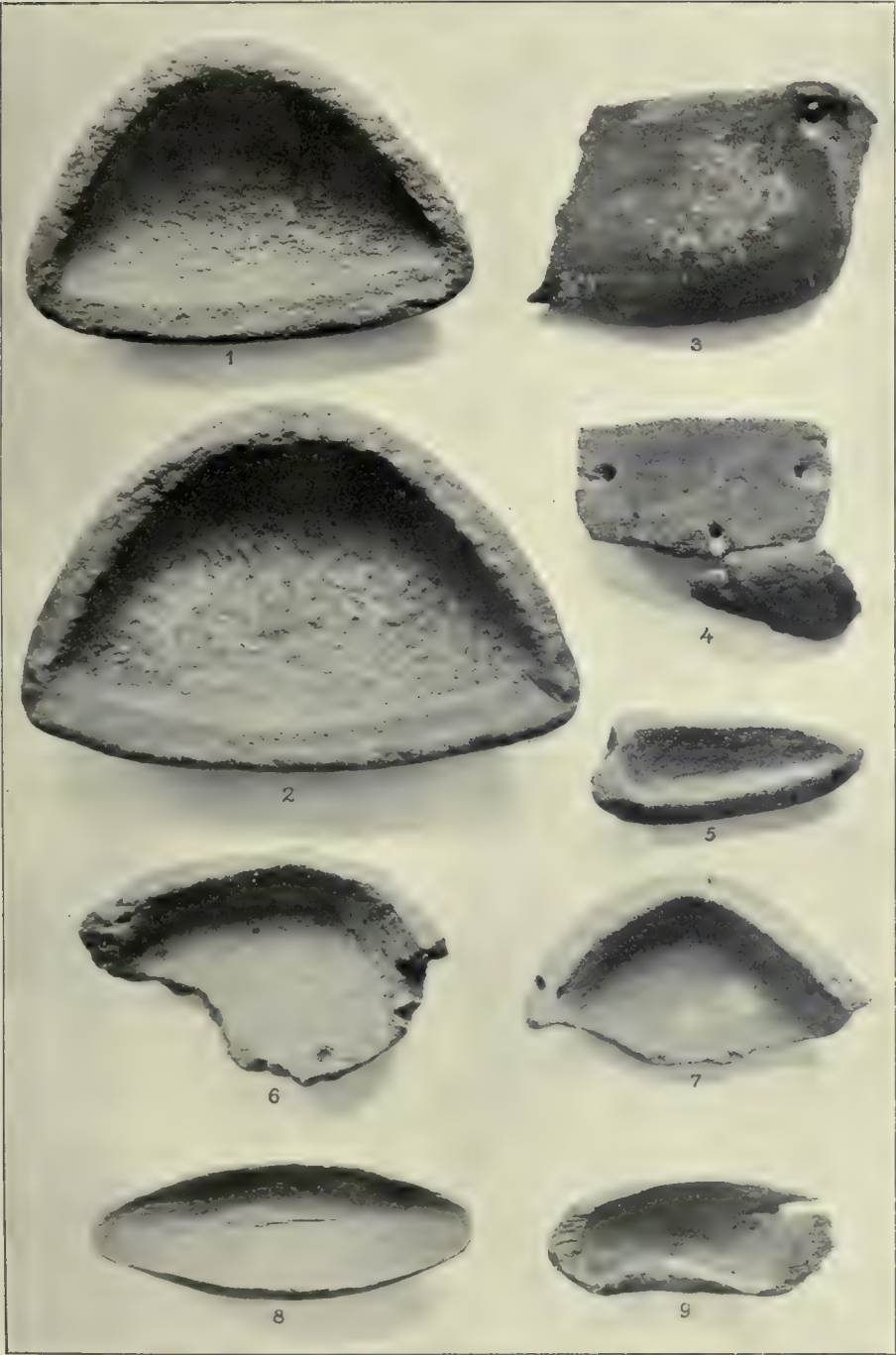
² Cf. e. g. THALBITZER II, p. 534, Fig. 260.

³ RYDER's statement (RYDER I, p. 327) that the lamp bowl stood on legs is founded on the finding of 6—7 items supposed to be legs of a lamp stand. This may possibly be the case, but the items in question might equally well have been legs of hunting stools; the dropping bowl itself has no sockets bored for the insertion of legs.

The wooden bowl shown in Pl. XXIV, 9 (L. 3635) should, I am inclined to believe, be regarded as one of these drip-bowls for a lamp. It was found among the houses on the east shore of Stormbugt. It is roughly made, hollowed out from a block, with thick walls, and somewhat charred on the underside. It will be noticed that the one side is convex, the other concave. The bottom is not flat; the bowl must, if I am not mistaken, have been supported by the stones on which the lamp was placed. The dimensions are, length 15·5 cm., breadth 5·5 and depth about 3 cm. The rough workmanship here employed is in marked contrast to that of other vessels and boxes etc., used in the house. A specimen corresponding at least in shape to this was found by the NATHORST Expedition.¹

The lamps were found in a good state of preservation. This is not the case with the cooking vessels, which were all broken; from the fragments brought home, not a single complete vessel could be reconstructed. Pl. XXIV, 3—7 show some of the more characteristic shards, from which it will be seen that the vessels were more or less rounded, without sharp edges, either at the corners or between sides and bottom. XXIV, 3, from Eskimonæssæt, has at the corner of the outer side a neatly formed projection, through which the hole for the cord was bored; another fragment, belonging to the same vessel as the piece shown in XXIV, 4, from Snenæs, house 406, has a similar projection on the inner side of the corner. The fragments XXIV, 3—4 indicate the original height of the vessels, 12 and 10·5 cm. respectively. It is otherwise with the fragments XXIV, 6, from Maroussia, house 144, and XXIV, 7, found by the meat-stores on the same island. Both these pieces are, it is true, pierced for hanging; the holes here seen, however, are, we may doubtless suppose, not the original ones, but were bored after the pot had suffered damage, and had been converted into a shallower one by grinding off the broken upper part. The inner depth of the vessel as it now stands is only 4—4·5 cm.; the holes are roughly bored, and the edge is but indifferently rounded. The general scarcity of material, necessitating constant economy with these stone vessels, is evident from most of the fragments. In Pl. XXIV, 4, it will be noticed that the two parts of the fragment preserved have been fastened together through holes near the edges, between which a groove is cut to sink the binding. Similar holes may also be seen in XXIV, 5, and in a bottom piece of reddish sandstone, not shown, from the east shore of Stormbugt.

¹ STOLPE, Pl. III, Fig. 10, right-hand bottom corner.



From the same locality we have the fragment XXIV, 5, which has been ground off at the edges to serve some further use¹.

Bowls and other vessels of various sizes have also been used for storing provisions, or as receptacles for small objects which might be damaged if left lying about. This last was evidently the purpose for which the finer type of vessel shown in Fig. 36 (L. 4015) was intended. It is small, measuring at the rim 10.2×6.1 , height 3.3 cm., and neatly carved from one piece of walrus tusk. It was found in a house at Rypefjeldet². A specimen of exactly the same sort is preserved in



Fig. 36. $\frac{2}{3}$ s.

our National Museum, where it forms part of a collection consisting mainly of finds from West Greenland, its precise locality of origin is, however, not known.

Another bowl carefully cut from a solid block, this time of wood, L. 3824 (Pl. XXIV, 8), was found in house 406 at Snenæs, mentioned in the foregoing (pp. 373 et seqq.). Its shape is approximately that of a boat, almost pointed at the ends, 21 cm. long, 7.5 broad and 3.5 high; the walls are quite thin. We have in this case definite information as to the purpose for which the article was intended; it contained, when found, 14 weapon-points of slate. The grave find at Cape Franklin includes a similar vessel put to a like use.³

In the same house at Snenæs were found the remains of another wooden bowl, similar in shape, but larger, thicker, and less finely worked (L. 3825). The bottom must have been at least 18×11 cm., but the sides slope sharply outward, the rim of the bowl at its end extending 10.5 cm. beyond the bottom, so that the original length would have been about 39 cm. Bowls of hollowed wood are represented in previous finds from North-east Greenland by a specimen of entirely similar form, albeit somewhat heavier at the ends, from

¹ Fragments of cooking vessels have been found at the following places; Eskimonæsset, several fragments of two vessels at least, viz. L. 3108 (XXIV, 3) and 3109; Maroussia, two fragments from different places, viz. L. 3355 (XXIV, 6) and L. 3376 (XXIV, 7); Renskæret, corner of a vessel from house 130, L. 3406; East shore of Stormbugt two pieces, viz. L. 3629 (XXIV, 5) and L. 3682, and Snenæs in house 406 a few fragments probably of one vessel, L. 3766 (XXIV, 4).

² One of the houses 522—24. In these houses MYLIUS-ERICHSEN made a nice find of bone articles, closely related to those found in Snenæs, house 406. On the decease of the finder, all further information as to this interesting find was unfortunately lost. ³ NATHORST, p. 364; STOLPE, Pl. VI, Fig. 19.

a place about $74^{\circ}20'$ N. lat.¹ From Cape Tobin also we have a roughly fashioned wooden bowl, of larger size, and of rather rectangular outline.²

Another type of vessel commonly found in Greenland consists of an oval wooden bottom, round which a broad belt of the same or other material is bent to shape, and the ends joined, forming a tub-like receptacle with perpendicular sides. At Angmagsalik, the sides are now mostly fashioned from thin slips of wood; formerly in West Greenland, whalebone was commonly used, and occasionally, when available, birch-bark.

The Danmark Expedition found several of the bottoms of such vessels, but in no case were the sides preserved. It may therefore be supposed that they were not built with wooden sides, but the more perishable whalebone used, as it is known to have been from earlier finds in North-east Greenland.³

The size varies greatly; At Snenæs, house 406 and Rypefjeldet, houses 522—24, bottoms were found measuring 29 cm. by 18.5 and 16.5 respectively.⁴ In the stone-built deposit belonging to grave 529 at Rypefjeldet lay a bottom piece (L. 3080) 18.5 cm. long, the remains of the vessel in which the articles deposited had been placed. The bottoms of some quite small boxes were picked up in house 398 at Snenæs (L. 3872, 7.7×4 cm.), in house 131 on Renskæret (L. 3466, 6.8 cm. long) and in house 141 on Maroussia (L. 3329, 5.5×3.6 cm.). Of a rounder form is the somewhat larger bottom-piece from house 132 on Renskæret (L. 3498, 10.3×8.7 cm.). A similar difference in size is noticeable in the bottoms of such boxes found by RYDER at Scoresby Sound.⁵

These two types of vessel are, as far as I am aware, the only ones which have been found in the untouched region of North-east Greenland; the coopered vessels built up with staves are first met with so far south as at Skærgaards Halvø, Scoresby Sound.⁶ The square wooden box, with nailed sides, found by the Germania Expedition on Jackson Island,⁷ should doubtless also be regarded as a product of southern influence. It resembles exactly the little chests used by the men at Angmagsalik for smalls odds and ends,⁸ and is the only one hitherto found in North-east Greenland.

The hollowed wooden spoons and ladles, as found by several expeditions⁹, are not represented in the "Danmark" collection.

¹ Christiania Museum, No. 10290, 25.2×12.7 cm., 4.5—5.5 cm. high. ² THALBITZER I, p. 455, Fig. 51. ³ At Skærgaards Halvø (THALBITZER I, Figs. 26 and 28).

⁴ L. 3925 and 4055. ⁵ RYDER I, p. 334. ⁶ THALBITZER I, Figs. 25 and 27.

⁷ KOLDEWEY, p. 649. ⁸ THALBITZER II, Figs. 288—289. ⁹ RYDER I, Fig. 28; STOLPE, Pl. III, Fig. 10.

The only item in the collection illustrative of the Eskimo method of obtaining fire by drilling, is that shown in Fig. 37, from house 134 on Renskæret. It is a narrow, irregular stick of wood, cut off at both ends, and formed the bottom of a fire set. On the upper side are three hollows, on the lower side one, all bored with the fire drill.



Fig. 37. $\frac{1}{2}$.

Requisites for sewing and dressing.

Most of the small articles used for needlework have been occasionally discussed in the foregoing, and references will therefore here suffice.

The Ulo, for instance, is perhaps the most important item in a woman's workbox, but as it is also used for various other kinds of household work besides sewing, a special chapter was here required (p. 440 et seqq.). As a matter of fact, several of the women's knives included in the collection are not adapted to needlework at all,

whereas others, such as those shown in Pl. VII, 11 and XXIII, 6 are so small and slight that they could only have been intended for this finer work.

As a cutting board, for finer skin work, the little wooden board, L. 3823, from Snenæs (Pl. XIII, 10) has probably been used (cf. p. 378).

The only needlecase in the collection, L. 3079, 9.7 cm. long, is mentioned on pp. 365—66 (Pl. VII, 9) among the articles from grave 529 at Rypefjeldet in connection with related forms from other Eskimo regions. It is worthy of note, both as regards workmanship and size.

Both cutting board and needlecase have their nearest parallels in the northern part of West Greenland.

In the same grave at Rypefjeldet was also found the boot-creaser, 10 cm. long, L. 3075 (Pl. VII, 1), which is ornamented with grooves at the top, and has been fitted with a ring by which it could be hung, or carried in a sling. In reference to this article, it has already been suggested (pp. 366—67) that it might possibly, with other items from the same find, have been intended to hang as a trinket from the woman's belt.

To this class of implement should doubtless also be reckoned the unfinished article (L. 3920) shown in Fig. 38, from house 523 at



Fig. 38.
1/2.

Rypefjeldet. It is made of reindeer horn, 13.2 cm. long; the lower end is rounded and thinned down to an edge; at the upper, boring has been commenced from both sides. It has not been smoothed at all.

Bodkins are represented in the collection by several specimens, including four¹ from the grave at Rypefjeldet above referred to (Pl. VII, 2—5). These were from 7—9 cm. long, all more or less coarse, but carefully made. Similar to these in workmanship and size is the specimen shown in Pl. XI, 16, (L. 3813) from house 406 at Snenæs (cf. p. 378). More sharply pointed is a bodkin from house 527, Rypefjeldet, (L. 3976) shown in the accompanying Fig. 39; it is 8.7 cm. long, and shaped with an almost conical head. The sharpest of all is that shown in Pl. XIII, 8, from Snenæs house 406, (L. 3814). Its present length is 8.6 cm., but the upper end is broken off.

The grave at Rypefjeldet contained, together with the bodkins, a much shorter tool, (Pl. VII, 6) only 3.1 cm. long, and pierced with an eye (L. 3076). This was presumably intended as a needle for drawing thread through the holes previously pierced with the bodkin:



Fig. 39.
2/3.

The comb shown in Fig. 40 was found in house 133 at Renskeret. It is 6.8 cm. high, and 3.9 cm. across, thick at the top (7 mm) diminishing evenly from there downwards, the points of the teeth being quite sharp. The teeth themselves are coarse, square-edged and set at wide intervals. Marks of the tools used in cutting the spaces may be seen far up the back of the comb.



Fig. 40. 2/3.

In shape, with the triple-curved upper edge, it resembles several of the combs from Angmagsalik³, but the comb from North-east Greenland is of coarser workmanship, fashioned as it is with more primitive tools, whereas the thin, close-set teeth of the Angmagsalik combs are produced with the aid of iron implements: fine knives and the saw.

Combs are of extremely rare occurrence in finds from North-east Greenland. In addition to this specimen, the Danmark Expedition found, in house 144 on Maroussia, part of the side of a comb like this, with one end tooth remaining. The piece (L. 3365) is 5.3 cm. long, and quite narrow. Save for this, the only other specimen hitherto brought home by any expedition is the beautiful and remarkable comb from Dunholm.³

¹ L. 3073—74 and 3077—78.

² Cf. THALBITZER II, Figs. 331 and 333 a.

³ THAL-

BITZER I, Figs. 55—56.

The rarity of this article is doubtless partly due to the difficulty of cutting out the teeth with stone implements; an entirely parallel instance is afforded by the earlier stone age in Denmark, from which, up to the present, only eight specimens, and these from but three different localities, have been found. In Danish antique combs we find, as in many of those from Greenland, marked furrows running up from the intervals between the teeth, either perpendicularly or obliquely, as also, on the one side, transverse furrows at the upper end of the teeth. When the surface of the comb has been polished, they appear as marks of wear, and have given rise to conjectures regarding the use of the article for combing bast fibres or other material for thread-making.¹ In the case of the present specimen, the surface of which is only slightly polished, we notice, on the side turned upwards in the figure, marked perpendicular furrows running up from three of the spaces, and two others running downward on either side of the middle hole. There is also a network of fine scratches running crosswise. On the opposite face, the marked longitudinal furrows are not apparent, but there are numerous fine scratches running lengthwise, and especially across, over the entire surface, from the back to the extreme point of the teeth.

These grooves and scratches may doubtless all be explained as due to the process of making. The marked perpendicular furrows are presumably caused by the slipping of the knife on leaving the groove between the teeth; the fine scratches by the treatment of the surface. The thinning down of the material would have been done mainly from one side, the reverse of that shown, which explains the disappearance here of the longitudinal furrows proceeding from the intervals between the teeth; the scratches still remaining on this side represent the bottom of the deep cross-cuts made in the original surface to facilitate the work of scraping away. I am inclined to think that this explanation may in all essentials also be applied to the Danish stone age combs.

Besides the above mentioned marks, the comb from Renskæret shows at the back four short cuts on either surface, each of those on one face closely corresponding to one of the four on the other. These cuts were possibly made as guides to ensure accuracy in the boring of the holes, which was done from both sides.

The comb is one of those articles in which the individual taste makes itself most markedly apparent; the comb from Dunholm is

¹ JAPETUS STEENSTRUP: *Stenalderens Tvedeling*, p. 366 note. SOPHUS MÜLLER: *Ordning af Danmarks Oldsager, Stenalderen No. 44*; C. NEERGAARD in *„Affaldsdynger fra Stenalderen i Danmark“*, p. 66 f.

quite unlike that from Renskæret. In Angmagsalik it has, it is true, settled down into a definite type of simple form; in West Greenland on the other hand, we encounter marked individual differences, and the same applies more or less to the other Eskimo regions.¹

¹ Cf. MURDOCH I, p. 150, NELSON, p. 57, BOAS III, pp. 107 and 417. It is most markedly seen in GREELY's find made at Lake Hazen (GREELY, vol. I, p. 406).

Clothing and Ornaments, Toys and Games.

The only real article of clothing hitherto known from North-east Greenland is a part of a boot (L. 3348) found in house 142 on Maroussia. It is made of sealskin, with the hair turned outwards. A portion of the sandal which curves up round the foot is preserved, showing the gathering and sewing at the juncture between sandal and upper. The specimen is, however, so crushed and defective, that no further details are distinguishable.

Ornaments are more numerous represented. A type of ornament not previously known, and evidently intended to be worn round the neck, is the round plate of mica, bored at one edge for a sling, of which two specimens (Pl. XXV, 20—21) were found at the settlement at Rypefjeldet, one (L. 3999) in one of the winter houses 522—24 (Pl. XXV, 20) and the other (L. 4078) in tent 549. The latter, which measures 3.8×4.6 cm., has the cord, of twisted sinew thread, preserved; it lay rolled up along the edge of the ornament itself; the other, measuring 4×4.4 cm., lacks the cord.

Other neck ornaments have already been mentioned under the heading of grave finds, as for instance the seven black, low cylindrical stone beads (L. 3064) from grave 529 at Rypefjeldet (Pl. VII, 8, cf. p. 364) as also the eight pierced teeth of fox (L. 3066) found together with two pendants (Pl. VII, 13—15) in grave 321 on the east shore of Stormbugt (p. 361—62). Of the drop ornaments, the one (L. 3058) is of bone, 2 cm. long, slender and rounded, narrowed at the waist and with a raised belt above (Pl. VII, 14), the other (L. 3059) is of black stone, 1.8 cm. long, nearly circular in outline, flat at the back and convex in front (Pl. VII, 15). These ornaments, the stone drop in particular, would seem to have been intended for the ear.

Similar articles of ornament were found in house 406 at Snenæs, (p. 374) to wit, one bored animal tooth (Pl. XI, 11) and eight long cylindrical bone beads, 1.1 to 1.5 cm. long (Pl. XI, 10) as also some drops of stone or bone. One of these stone drops (L. 3760) is of the

same shape, with flat back, and the same colour as the one above described; it is 2 cm. high, (Pl. XI, 13); the other, (L. 3761) which is 2.1 cm. high, is conical in shape, with convex base, fashioned from a handsome kind of spotted stone (Pl. XI, 14). This drop has been worn so long that the original hole was nearly worn through, and another has therefore been pierced lower down. Of the bone drop ornaments, the one (L. 3754) is broad pear-shaped, 1.1 cm. high and 1.2 cm. broad (Pl. XI, 8) another, (L. 3755) which is 1.4 cm. long, is slender (Pl. XI, 9), resembling somewhat in shape that shown in Pl. VII, 14.

In house 134 at Renskæret was found a small, almost heart-shaped bone pendant (L. 3560), only 1.5 cm. high, the ring of which is now broken through (Pl. XXV, 13). Similarly small in size, 1.4 cm., but in shape more resembling Pl. XI, 9, is the bone drop shown in Pl. XXV, 12, from one of the winter houses 522—24 at Rypefjeldet. It has lost its ring; the split noticeable at the bottom is hardly intentional, but rather due to the material. From the same find, we have a pear-shaped drop 1.4 cm. long (L. 4006), which may or may not originally have had a ring; also two large bone drops (Pl. XXV, 10—11) 3.4 and 3.3 cm. high, both rough and unpolished (L. 4004 and 4003). From house 406 at Snenæs there is also a small drop ornament 2 cm. high (L. 3753), shaped like a leg or a boot (Pl. XI, 12).

All the drop ornaments hitherto described, whether of stone or bone, have one feature in common; the hole bored for the string is run transversely through at the upper end of the drop, sometimes carved out into a distinct ring. It is otherwise with the bone drop shown in Pl. XI, 7, from house 406 at Snenæs (L. 3756). Here, the hole is pierced from the top obliquely through to one side under the raised collar; it would have thus have been held by a knot in one end of the string. The specimen is 1.5 cm. high.

A cylindrical bone bead, 2.9 cm. long and roughly cut (Pl. XXV, 14), ornamented with three bands (L. 4007), is from the houses at Rypefjeldet. It is perhaps doubtful whether this formed part of any personal ornament; it resembles mostly the beads used by the Eskimos of Angmagsalik for ornamentation of whip-lashes. The large diameter of the bore, 6—7 mm., would also seem to point in this direction.

The two bone plates with peculiar ornamentation, shown in Pl. XI, 1 (L. 3805 from Snenæs) and Pl. XXV, 19 (L. 4016 from Rypefjeldet) have been dealt with in the foregoing. A similar specimen from a grave find¹ indicates these as belonging to the class

¹ NATHORST, p. 364.

of women's ornaments. The decorative pattern is also found in hair ornaments from Southampton Island, which they resemble in several respects; certain features, however, especially the hole through the middle, which is found in all of them, render it doubtful whether they should be compared with these ornaments, which have not hitherto been found in Greenland.

The specimen shown in Pl. VII, 7, (L. 3072) has in the foregoing (p. 367) been mentioned as probably forming the fastening of a woman's belt. It is a flat piece of bone, 8.7 cm. long, pierced in the centre. Pl. XXV, 15 also, (L. 4012), from Rypefjeldet, has doubtless been intended to serve a similar purpose. It is 4.8 cm. long, with a hole about 3 mm. diameter in the middle, this hole being, however, expanded to a hollow of greater circumference on the convex side, presumably so as to take the knot of the thong.

The bone button Pl. XXV, 16 is apparently from the dress of a man; similar ones are used elsewhere in Greenland for the straps which serve as braces to hold up the kayak skirt; it is passed through a round plate in the upper edge of the skirt.¹ The specimen in question (L. 4011) is 2.8 cm. long; it was found, like the last-named and the next following specimen, among the houses 522—24 at Rypefjeldet.

Pl. XXV, 17 shows a piece of bone 3 cm. long, pierced transversely with two holes. The use for which it was intended cannot be determined with certainty; all that we can say is that it must have served to hold two straps together. Bone studs of this sort are known in connection with the kayak skirt, where they act as a link between the straps hanging down in front²; on the other hand, exactly similar pieces are also used for tightening the cross-straps of the kayak.³ This last we may presumably take to have been the purpose of the object shown in Pl. XI, 15 (L. 3758); it is far more roughly cut, 3.2 cm. long, and with one broad side concave. It was found in house 406 at Snenæs.

Altogether indeterminable is the piece of carved bone Pl. XXV, 18 from Rypefjeldet (L. 4013). It is 4.2 cm. long, the upper side convex, the lower flat.

The pierced bears' teeth must be classed either as articles of ornament or as toys; at Angmagsalik, they are hung in bunches at the ends of a split thong, to serve as a rattle. The collection comprises three such teeth, only one of which (Fig. 41 *b*, L. 3395) is pierced right through; this specimen was found on the camping ground west of Vestre Havnenæs. The tooth shown in Fig. 41 *a* (L. 3494) from house 132, Renskæret, shows the commencement of

¹ Cf. THALBITZER II, p. 576, Fig. 299 *a*. ² Ibid. p. 572, Fig. 296. ³ Ibid. p. 391. Fig. 95 *g—i*.

a boring on either side, but has not been fully pierced; in the third and last specimen, L. 3396, which was found together with that shown in Fig. 41 *b*, boring has been commenced from one side only.

In the description of the find at Snenæs, house 406, mention was made (p. 374—75) of some small animal figures, carved in bone, and pierced for threading on a string (Pl. XI, 2—5). Three such figures (Pl. XXV, 7—9) were also found at Rypefjeldet, probably all in house 522, where the one at least (L. 3902) lay in a little cavity at the fore edge of the bench¹. Of the figures three from Snenæs (L. 3748—50) represent swimming birds, apparently loons. They are from 1·8 to 3·2 cm. long, and flattened at the bottom so as to stand; two of them are figured Pl. XI, 2—3. One, from Rypefjeldet, (Pl. XXV, 7) represents a sitting falcon, a bird which, as far as my knowledge goes, has not hitherto been found among carvings from Greenland. It measures 2·9 cm. from head to tip of tail (L. 4002). The remaining four (Pl. XI, 4—5 and XXV, 8—9) are seals; one (Pl. XI, 5) which is 3 cm. long, (L. 3751) is rounded, the three others (L. 3752, 3902 and 4001) measuring 2·2 to 4·5 cm., have a flat resting surface, indicating that they were intended to show the animals as lying on their backs. It is thus extremely doubtful whether these figures were designed as hanging ornaments, since, from the way in which the holes are bored, they would hang not only head downwards, but flank outwards. The question of their possible use as toys or pieces in a game has been discussed in the foregoing, under the heading quoted.

Together with the falcon was also found a small bone bear (Pl. XXV, 6) in a standing position, with neck outstretched. Fore- and hind legs are shown, but joined in pairs, as in the fine large figure of a bear Fig. 3, p. 376. The present figure, which is 4·1 cm. long, has originally been finely polished, but is now much weather-worn; it is pierced with a large hole in the middle. AMDRUP found, at Cape Tobin, a figure of a whale similarly pierced, together with several other animal figures pierced with a small hole at the hinder end, as those above described.²



Fig. 41. ²/₃.

¹ As regards the two others, (L. 4001—02) all that is known is that they were found by MYLIUS-ERICHSEN in one of the houses 522—24.

² THALBITZER I, p. 478, Fig. 58.

A little toy bear, of wood, (Pl. XXV, 4) was found in house 132 at Rensskæret. This figure (L. 3501) which is 6.8 cm. long, and 1.8 cm. high, is somewhat roughly carved from a flat stick, only 9 mm. thick. The legs are thus only indicated by a couple of blocks, 1.2 cm. broad, the carver apparently not daring to make them thinner, lest the wood should split, as the grain runs from head to tail of the figure. He has nevertheless succeeded, with few strokes of the tool, in giving a very natural presentment of the bear with its long neck outstretched, small ears, and slightly hanging belly-part.

The representations of the human figure in Greenland art are far inferior to those of animals. All the specimens of human figures in the present collection are of the usual conventional type, without arms, and with the face cut as a flat surface. The same applies to most of the other figures found in North-east Greenland;¹ in one or two cases, however, human figures have been found with eyes, nose and mouth indicated.²

In the same house with the wooden bear above described was found the wooden figure of a woman (Pl. XXV, 1) 5.9 cm. high. The hair is done up in a tall topknot pointing slantwise back, the body is nude (L. 3500). As far as I am aware, no corresponding arrangement of the hair is found on any other Greenland doll hitherto known; both in the west and at Angmagsalik, the topknot is shown standing straight up, and the upper, broader part above the tie is generally executed with particular care; the wooden dolls are mostly designed to be seen full face.³ The woman from Rensskæret has done her hair in a peculiar fashion, with no tie in the middle, but making an even cylindrical figure, rounded at the top; the arrangement as it stands resembles mostly the central Eskimo method of doing the hair as shown by Boas.⁴

Another woman's figure, (Pl. XI, 6) carved in bone, is from the great find made at Snenæs. This specimen (L. 3747) which is 3.1 cm. high, is dressed in the wide frock in which the child is carried on the back. Owing to the shape of the material, the figure tapers more than would be natural towards the lower end. The legs are separated by a series of drilled holes.

The houses on Rensskæret contained several other small wooden figures, as for instance in house 131 the naked man shown in Pl. XXV, 2 (L. 3443) 4.9 cm. high, and in house 130 the dressed figure of a man (L. 3417) shown in Pl. XXV, 3, which is only very small, 3.9 cm. high. The lower edge of the frock is indicated both in back

¹ KOLDEWEY, p. 601, Fig. 1; NATHORST, p. 364. ² NATHORST, p. 348; RYDER I, p. 337, Fig. 37. ³ Cf. e. g. THALBITZER II, p. 645, Fig. 366. ⁴ BOAS I, p. 561, Fig. 515 profile drawing.



and front of the figure. Three other figures lack the head, and being executed altogether with but little regard for detail, are difficult to determine. A small figure 2·8 cm. high in present state from house 133 (L. 3537) is apparently male, as also another now 4·7 high (L. 3563) from house 134; it would seem to be wearing the natit and boots. Altogether indeterminable is a larger figure from the same house (L. 3562); it is fashioned from a kind of wood which flakes off a great deal, so that only the lower portion of the figure is now preserved, 4·9 cm. long. Its breadth, however, 2·7 cm. shows it to have been originally far larger than the remaining dolls.

With these small figures we pass to the category of toys. As usual among the Eskimos, most of the toys are miniature models of the implements used by adults.

From the sphere of conveyance, the little trace buckles for dog harness (Pl. XXV, 22—23) have been described in the foregoing (p. 418) as also the small wooden kayak shown in Pl. XXV, 5 (p. 418—19).

Of weapons, the bow is represented by a fragment, 11·7 cm. long, from one end (Pl. XX, 25) found in shelter 565 at Rypefjeldet (L. 4113).

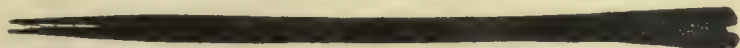


Fig. 42. $\frac{1}{2}$.

At the top may be seen the horn round which the loop of the string is passed, at the other end the fork of the splicing by which this endpiece, exactly as in the real weapon, was joined to the middle, the point of the latter being set into the fork and lashed fast.

The hinder end of an arrow-shaft 12·4 cm. long (L. 3621) from tent 301 on Baadskæret is shown in Pl. XXV, 24. The part near the notch is flattened, and shows the binding of sinew thread used for holding the feathers. This binding was not preserved on any of the real arrow-shafts found. Another, complete arrow-shaft, 19·4 cm. long, (L. 3382) from Maroussia is shown in Fig. 42.

Pl. XXV, 26 shows a small throwing stick (L. 3565) from house 134 on Renskæret. It is in present state 11·8 cm. long, the hinder end lacking. The holding end is rounded, and with grooves on both sides to form a grip for the fingers; there is, however, no hole for the index finger similar to that in the specimen found by RYDER at Scoresby Sound.¹ It thus agrees with the throwing stick found by the NATHORST Expedition², but differs from both the former specimens in the fact that the sides run more or less evenly, whereas

¹ RYDER I, p. 318, Fig. 18 *a*. The notch shown about the middle in the figure Pl. XXV, 26 is merely due to a knob having fallen out of the wood.

² STOLPE, Pl. V, Fig. 17 to the right.

in the two real implements they narrow in considerably at the hinder end, while the holding part is very broad. In the case of a toy model, however, it would not be wise to trust overmuch to fidelity of detail. One feature common to both the previous specimens is the fact that the hole for the bone peg of the shaft is placed very close to the end at the holding part; the same is also indicated in the case of the throwing stick from Renskæret, as we may doubtless suppose the hollow visible in the middle line of the specimen to be the beginning of the hole intended to receive the bone peg.

Of toys having no connection with the future occupation of the child, the only specimen in the collection is the disc of a spinning top (L. 4057) from Rypefjeldet, shown in Pl. XXV, 27. It measures 7.5×5.2 cm., a hole for the stick is seen in the middle. A disc found by RYDER at Scoresby Sound¹ was of the same oblong form.

The widely popular game of *ajagaq*, a kind of cup and ball, or ring and pin, which is known under one form or another throughout the Eskimo region and great parts of the Indian territory,² is here represented by the piece of bone shown in Pl. XV, Fig. 7, (L. 3676) from tent 328 on the east shore of Stormbugt. The specimen is of extremely primitive workmanship, fashioned very roughly from the humerus of a seal. At the lower end of the bone, 7 holes have been bored, otherwise, no further shaping has been attempted, save that the tubercle has been removed.

When in use, the bone would be fastened to one end of a string, the other end of which is tied to a sharpened stick held by the player, whose aim is to throw up the bone and catch it on the point of the stick; hence the holes in the former. The present specimen is not pierced for the string, as is frequently found to be the case; in this instance, the string must have been tied round the bone.³

Although the main principle of the game is the same, the pieces of bone used exhibit considerable difference, even within restricted areas of West Greenland.⁴ At Angmagsalik, the method is simplified; here, a hollow bone is used, often without other holes than those offered by the natural cavity.⁵

The form used in North-east Greenland is also found in four

¹ RYDER I, p. 336, Fig. 35.

² Cf. CULIN, pp. 527 et seq.

³ In one of the houses 522-24 at Rypefjeldet a fragmentary humerus was found with the tubercle cut off in the same way (L. 4034). It has presumably been intended for the same purpose, but this cannot be said with certainty, as the lower end of the bone is lacking. A hole near the shoulder joint was probably designed for the string.

⁴ Cf. PORSILD II, p. 228, Fig. 62.

⁵ Cf. THALBITZER II, p. 656, Fig. 381 and p. 658, Fig. 387.

specimens from West Greenland, all from the more northerly part of the coast. One of these, from Sarqaq in the Waigat, presented to our museum by PORSILD, is shown in his work.¹ Outside Greenland, the same bone, used for *ajagaq*, is found among the Kinepetu and Aivilik Eskimo,² and even as far distant as among the Makah Indians at Neah Bay in the State of Washington.³

The *ajagaq* from the east shore of Stormbugt is the first specimen of the game found in North-east Greenland. It is also the only kind of game which has been found, unless we consider the little carved bone figures as forming part of a game such as the "*tingmiujang*" of the central Eskimos (cf. pp. 374—75).

¹ PORSILD II, p. 228, Fig. 62 c (L. 6912); of the two others, one (L. c. 1041) is from Preven, Upernivik District, another (L. c. 828) from Pertlertut, Disco, while the third, (L. c. 451) is only located as from North Greenland.

² BOAS III, p. 112, Fig. 164.

³ CULIN, p. 559.

Various Items.

In addition to the articles hitherto mentioned, the collection contains a number of objects, the purpose of which cannot be stated with certainty, or which cannot be included under any of the previous headings.

Fig. 43 shows a bone toggle found in tent 615 at Rypefjeldet (L. 4144), possibly from the lower end of a drag-line, such as is used for hauling home the carcass of a seal. It is made of narwhal's tusk, and measures 6.6 cm. in length. One end of the piece, that on the left in the figure, has been thinned down to an edge, the other being left blunt. Near the middle, an oblong slit has been cut for the line, by boring two holes close together.



Fig. 43. $\frac{1}{2}$.

The piece of bone shown in Pl. X, 9 (L. 3089) from Eskimo-næsset, is probably the handle of one of these drag-lines. It is 11.2 cm. long, somewhat broader at the middle than at the ends, so as to leave room for the hole through which the line was passed.

On the east coast of Store Koldewey Island, a piece of bone as shown in Fig. 44 was found lying on the shore (L. 3299). It is irregular in shape, the ends rounded, section roughly trilateral. The substance of the bone is now highly porous. Length 8.8 cm., thickness about 3 cm. It is pierced with two fairly large holes, not set parallel each to the other, but at an angle of about 60° . The interval between the holes is on the side shown in the figure 2.8, on the reverse 5 cm. I am unable to say to what use it could have been put.

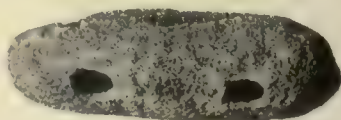


Fig. 44. $\frac{1}{2}$.

A remarkable item is the object shown in Pl. XXII, 14, from Syttenkilometernæsset (L. 3189). It is made of narwhal's tusk, 21.8 cm.,

long, breadth at middle 1·5, increasing at the ends to 1·9 and barely 1 cm. thick. Section elliptical. The whole piece is very slightly curved. There are two holes, set close together, at either end, connected on the convex side by a groove intended to take the part of the thong passed through the holes which lies between them (14*a*); there is no corresponding groove on the opposite side. The extreme portion at either end, beyond the holes, is thinned down on the concave side, so as to form a notch (14*b*). It is probably some kind of handle.

Pl. XXVI, 1—4 shows some objects made from reindeer horn. Pl. XXVI, 1, (L. 4142) is the tip of an antler cut off at the hinder end, and but very slightly shaped; the fore end is somewhat broader, and fairly flat. The lateral edges have been evenly rounded, and meet at the fore end in a blunt point. On the fore end, the surface shows marks of the tool used for shaping. The extreme portion is worn quite smooth, the wearing continues farther down the right edge than the left, where it only runs for about 1·5 cm. The length of the piece is 27·7 cm., greatest breadth 2·8. Possibly it may have been intended as a snow-beater¹. It was found in the meat-store 636 at the spring settlement at Rypefjeldet.

Pl. XXVI, 2 (L. 3522) is from house 132 at Renskæret. It is a slip of reindeer horn, 29·5 cm. long, which has been split off from the antler. One edge is rounded off at the fore end, so that the point lies at the opposite edge. At the hinder end, on the outer side, part of the bur is visible; on the inner side, that shown in the figure, the inner tissue of the antler has not been removed. The specimen is doubtless a preliminary stage of some implement, possibly a kayak cleaner.

Pl. XXVI, 4, (L. 3719) from a tent on the east shore of Stormbugt, is also formed from a reindeer antler. At the hinder end, the bur is preserved for its whole extent, on the right in the figure, two branches have been cut off, but a couple of small projections still remain on the site of the hinder one. The forepart of the antler has been split down to the shape of a knifeblade; the splitting off of another piece at the hinder end, on the other hand, is doubtless due to accident. The piece is 27·8 cm. long.

The two foregoing specimens can only be regarded as in the preliminary stages of workmanship; the next two, however, Pl. XXVI, 3 and Fig. 45, both found on Renskæret, have, although shaped but to a primitive degree, been used in the state in which they now appear. They are rough



Fig. 45.
1/2.

¹ Cf. Boas III, p. 407, Fig. 204, especially c.

slips of reindeer antler; only the forepart has been narrowed down and rounded off at the edges and the end, and neither edge nor point are sharp. Both are evidently intended for the same purpose.

Pl. XXVI, 3 (L. 3483) from house 132, a complete specimen, is 23.9 cm. long, 2.5 cm. broad at the hinder end, the rounding off of the edges commences about 3.5–5 cm. from the point, nearer the end on the left than on the right edge. — Fig. 45 (L. 3554) from house 134, has the hinder end broken off, present length 12.5 cm., greatest breadth 2 cm.; the part rounded off for use is only a couple of cm. long.

The implement shown in Fig. 46 (L. 3206), from Syttenkilometernæsset, consists of the end of a reindeer antler, 23.5 cm. long, and broken off at the hinder end. Only a portion 3.5–4 cm. long at the fore end has been shaped, this being cut down to a wedge shape from both sides; the two surfaces meet, though not in a sharp edge.

A similar wedge-shaped pointing of the fore end is seen in the implement shown in Pl. XX, 7, (L. 3885). This specimen, found at the camping ground at Snenæs, is 34 cm. long, and is a piece split off from a long bone. The wedge-shaped sharpening of the one end is all that has been done to it.

A piece of bone found at the same place is shown in Pl. XX, 8, (L. 3884); it has been split off in a similar way, and from marks at the hinder end it is evident that the bone has been cut through by means of the drill. The length is 26.8 cm., breadth of a rear half 2.5–2.8. From the middle or thereabouts, the bone is narrowed down from either side to a breadth of only 1 cm.; the extreme end has been thinned down with a few irregular strokes.

Fig. 47 shows a carefully fashioned and smoothly polished little tool (L. 3323) from house 141 on Maroussia. It is made of narwhal's tusk, 7.2 cm. long, round, but slightly flattened. The upper end is convex, the thickness, which is here 0.9–1.2 cm., decreases gradually to 5 mm., after which the extreme end runs down abruptly to a short conical point, in which a small hole has been driven, scarcely 2 mm. deep and thus hardly suited for the insertion of a drill-bit. A similar article, (L. 6631) was brought home by AMDRUP from

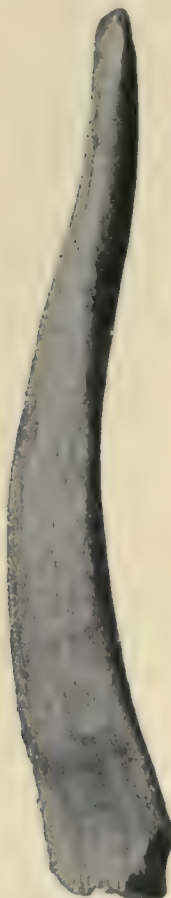


Fig. 46. $\frac{1}{2}$.



Fig. 47. $\frac{2}{3}$.



North-east Greenland. It is somewhat heavier, and fashioned of reindeer antler, otherwise corresponding in shape and size. The lower end terminates in a surface some 4 mm. in extent, at the centre of which a similar slight depression is noticeable, the depth in this case being even less, not quite 1 mm.

The little tool made of reindeer horn (L. 3486) shown in Fig. 48, was found in house 132 on Renskæret. It is a piece from the tip of the antler, 8.4 cm. long. At the broad end it has been cut off straight, and here a hole has been made, about 1 cm. long, greatest breadth 0.5 cm. and about 1 cm.



Fig. 48.
1/2.

deep, apparently intended for the insertion of a knife-blade or other instrument. At the thinner end, the antler has been flattened somewhat on both sides, and at the tip itself there is a fine hole as in Fig. 47, but slightly oblong, and about 3 mm. deep.



Fig. 49.
1/2.

The piece of bone shown in Fig. 49 (L. 4098) was found in tent 552 at Rypefjeldet. It is 12 cm. long, the end turned downwards in the figure still shows distinct marks of the drill with which it was cut off. The left side has been shaped so as to render the piece more quadrilateral in section, whereas the remaining sides have retained their natural rounded form. At the upper part, for about 2—2.5 cm., all four faces slope slightly down towards the end itself, which is shaped flat, and appears to have been the part of the implement intended for use.

Fig. 50 shows a flat point of bone (L. 3325) from house 141 on Maroussia. It is 10.8 cm. long, but a portion has been broken off at one end. The breadth is greatest at the middle, 9 mm., decreasing gradually thence towards the ends. Thickness of the lower half about 5 mm., decreasing from the middle upwards to about 3 mm. The point is blunt, and worn smooth.

A point of exactly the same sort, but more roughly fashioned, (L. 3534) was found in house 133 on Renskæret. It is made from a splinter of reindeer horn, from which not even the inner tissue has been removed. The point, which is rounded and blunt, is the only part which has been worked to any degree. The length is 17.3 cm. between point and hinder end, but the whole piece has in course of time warped somewhat, and is now slightly curved. The greatest breadth is 8, greatest thickness 7 mm.

A very long, thin, fairly rounded point of bone (L. 3311) was found in house 140 on Maroussia. Length 31.3 cm.; greatest thickness is near the hinder end, and amounts to only 1.1 ×



Fig. 50.
1/2.

0·8 cm. From here it decreases evenly towards the point, which is not sharp. The last two cm. at the hinder end run somewhat thinner, the hinder part is rough.

A far smaller piece, rounded, but now much weather-worn, is the bone point from house 406 at Snenæs (L. 3815). It is 17·5 cm. long, thickness at the greatest part 7 mm., decreasing towards the blunt point and also, in a lesser degree, towards the hinder end. A fragment of the fore end of such a point, 5·8 cm. long, (L. 4032) was found at Rypefjeldet.

Pl. XV, 8 shows a small pointed splinter of reindeer horn (L. 3533) from house 133 on Renskæret. It is 4·7 cm. long; at its greatest part, the section is irregularly quadrilateral, only the last cm. at one end is conically pointed. The point was doubtless originally extremely sharp.

Fig. 51 is a small conical piece of hollow bone (L. 3536) 2·8 cm. long. The mouth measures $1 \times 1\frac{1}{2}$ cm., the thin end is blunt and angular. It would seem to have served as a ferule for some instrument or other. Found in same house as previous specimen.

Among bone implements should finally be included the non-descript specimen shown in Fig. 52 (L. 3654) from among the winter houses on the east shore of Stormbugt. It is made of reindeer horn; the curve and the difference in breadth, from 1·2 to 1·5, between the two ends, are probably due to the original shape of the antler. Thickness at the middle 1 cm., at the ends 7 mm. There is an oblong hole at either end, that at the broader end must have been about 2 cm., the one at the narrow end only some few mm. deep.



Fig. 52. $\frac{1}{2}$.

In addition to the bone specimens above described, a number of pieces of bone were found at the various places, all more or less shaped, and doubtless intended for working on, or fragments from the making of other tools.

The find at the camping ground at Syttenkilometernæsset contained an unusual number of wooden articles. The position of the settlement on a jutting point of the open coast, with the Polar Current setting close in to land, would naturally furnish opportunity for a rich collection of driftwood. Several articles from here have already been mentioned in the foregoing, as for instance the prongs for fish spears Pl. XVII, 3—4, the ulo handle Fig. 33 a, the toy kayak

Pl. XXIV, 5, and the fragments of weapon shafts Pl. XVII, 1—2 and of the sledge cross-bars Pl. XVI, 5—6. Several others now remain to be described.

The objects shown in Fig. 53 are particularly worthy of mention. Both are unfortunately imperfect, the forepart in each case being defective, so that we cannot determine the use to which they were put. The grip part is hollowed out for the four fingers, and a space has been cut for the thumb on the right edge. The shaft or blade is flat, with the lateral edges evenly rounded off.

Fig. 53 *b* (L. 3218) is in present state 30.1 cm. long; the fore end is bevelled off for lashing on the forepart of the tool, now missing. The grip has originally been broader; on the left side it terminates in a flat surface 1.2 cm. thick, which must have been shaved down to receive another part of the grip, now lost, but which would have reached some 10.5 cm. down towards the middle, and been lashed to the main piece in two places, just in front of and behind the hollow for the fingers; part of the lashing, which was of whalebone thread, is still preserved. In addition, the front fastening has been strengthened with two nails. Immediately in front of the grip, the breadth is somewhat less; from the middle to the fore end, however, it remains nearly uniform throughout, about 3.5 cm. Thickness 1.6—1.8.

Fig. 53 *a* (L. 3219) is much weatherworn, and overgrown with moss and lichen. It is thus impossible to see whether the present breadth of the grip, only 2.8 cm., answers to the original dimension;



Fig. 53. $\frac{1}{2}$.

if anything has been broken off, however, it can only be for the last 5 cm. of the hinder end. As in the case of the foregoing specimen, the part in front of the grip is narrowed in; the greatest breadth, 3.7 cm., is not reached until a distance of 13 cm. from the hinder end. In contrast to Fig. 53 *b*, the breadth decreases evenly forward down to 3 cm., but the fore end is broken off and missing. Present length 32.2 cm., thickness, which increases gradually towards the grip end, 1.3–2.2 cm.

As already mentioned, we have no means of determining to what use these implements have been put. Wooden articles with the same marked grip have, it is true, before been found in North-east Greenland; as for instance the handle brought home by RYDER from Scoresby Sound, which he considered as belonging to a throwing stick¹, and a similar specimen found by AMDRUP at Sabine Island.² Three complete implements have, however, also been found with the same type of grip, 1 by the Germania Expedition and 2 by NATHORST's.³ These last show, that this handy grip arrangement has, as is only natural, been used for various wooden implements; with such a soft material, it was not difficult to carve out the handle end so as to give a good hold. One of the three complete specimens is club-shaped, the two others are pointed, but all are narrow and rounded, whereas those shown in Fig. 53 are broad and flat, thus doubtless representing a third type of implement.

The wooden fragment shown in Fig. 54 (L. 3220) was found at the same camping place. It is 17.5 cm. long, convex on the face

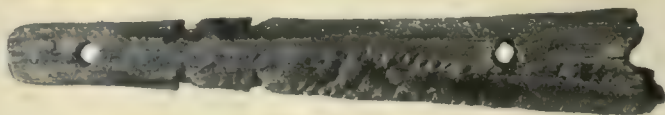


Fig. 54. $\frac{1}{2}$.

shown in the figure, but flat on the reverse, thickness about 1 cm. The end preserved is cut off straight, but with the corners rounded off. The breadth here is 1.6 cm., but increases gradually throughout the length of the fragment up to 2.9 cm. Two holes have been bored right through in the line of the median axis, at 2 and 13 cm. distance from the narrow end; a third hole, 3.6 cm. from the latter, is indicated in the broken part. Two slanting notches have been cut in either edge, at 4.5 and 6.5 cm. from the end.

¹ RYDER I, p. 318, Fig. 17 *b*.

² THALBITZER I, p. 484, Fig. 63.

³ Shown by THALBITZER loc. cit. p. 531. The implement from the Germania Expedition (Fig. 103), however, which is 40 cm. long, is given on a smaller scale than the two others, of which Fig. 104 is stated as 39 cm.

Pl. XVII, 7 shows another wooden specimen from the same place (L. 3214). The end pointing left has been broken off, the other end is complete. In the lower edge, which is the thicker (1.5 cm.), a groove 6 mm. wide has been cut, beginning a couple of cm. from the end and continuing to the point of breakage. The thickness decreases towards the upper edge, where the two surfaces meet at an angle. The breadth is 4.2 cm. Close above the groove two holes have been bored through, one 2 cm., the other 9 cm. from the complete end; a third is seen at the break. On the reverse side to that shown, a slight furrow runs down from the middle hole to the grooved edge, showing that the holes must have been intended to take the lashing with which some blade or cutting edge, for instance, was held fast in the groove. The preserved end is cut off somewhat obliquely, and part of the upper edge has been cut away for the 5 cm. nearest this. There is some likelihood that the specimen may have served as the handle of a two-handed scraper, as in the case of the bone piece shown in Pl. XXVI, 5; in its present defective state, however, this cannot be determined with certainty.



Fig. 55. $\frac{1}{2}$.

Fig. 55, from the same place, (L. 3234) is a foursided stick, 21.4 cm. long, 1.4×1.8 thick. One end is cut off straight, the other has been shaved down slantwise for about 10 cm., with a notch above; here an extension piece has been fastened with two nails, one where the end of the slanting surface is now, the other 2.5 cm. in from the edge of the notch. At right angles to the direction of these nails, two others, as shown in the figure, have been driven, 5.5 and 9 cm. from the straight end of the piece; one of these is still completely, the other partially preserved in its hole. From the inner hole a groove runs down to the lower edge, so that something was evidently intended to be lashed fast there; the nails only served to hold the lashing. Between the two nail holes there is a groove in the upper edge, 1.5 cm. long, 5 mm. wide and deep.



Fig. 56. $\frac{1}{2}$.

At the same place, tent 75, the fragment shown in Fig. 56 was found. It is quite flat, only 6 mm. thick, breadth 4, length now 7.8 cm. The preserved end is rounded, close to this end a hollow about 2 cm. in extent has been cut.

Pl. XVII, 5—6 (L. 3251 and 3250) show a couple of irregular sticks, merely terminating at the one end in a thin, fine point.

Two roughly spindle-shaped sticks, (L. 3252—53) were likewise found at Syttenkilometernæsset. The former of these is rounded, 10 cm. long, thickness at the middle 1·5—1·9 cm. and at the ends about 0·8—1 cm. The other is more quadrilateral, 9·6 cm. long. At the middle it is 1·5, at the ends 1·1 cm. A round spindle-shaped piece of wood (L. 3504) from house 132 at Renskæret is exactly similar to 3252, but larger, 13·2 cm. long, thickness at the middle 2·2—2·4, at the ends 1—1·2. All these might be the legs of low hunting stools to stand on.

At Renskæret also were found two pieces of wood, alike in shape, both broken off at one end. They are made from a four-sided stick, broadest at the preserved end, about 2·5 cm. from this there is a hole driven right through; it has not been drilled, but cut out from both sides. The longer piece (L. 3445) from house 131, is 15·6 cm. long, 1·9 cm. broad and 1·4 cm. thick, at the preserved end; from here the breadth decreases to 1·2 and the thickness increases

to 1·6 at the break. The other fragment, (L. 3419), from house 130, is in present state only 9·7 cm. long; at the preserved end it is 2·2, and at the other 1·6 cm. broad. Thickness 1·6 cm.

Several other smaller pieces were found at various places, these being spindle-shaped or cylindrical, ranging from 6—9 cm. in length; also numerous wooden fragments and sticks only slightly shaped.

Whalebone as a material was greatly prized; specimens were found not only on the open coast: Thomas Thomsens Næs, Syttenkilometernæsset, Renskæ-

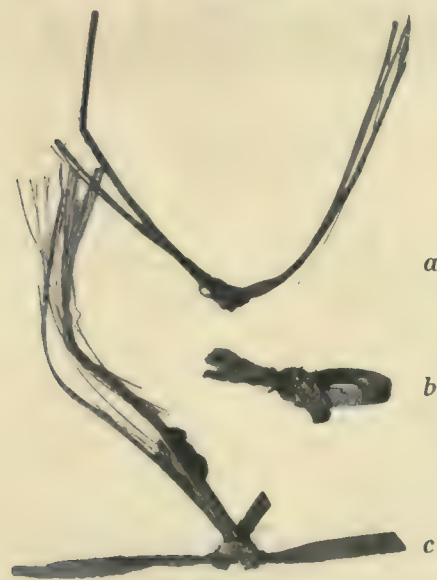


Fig. 57.

ret, and Maroussia, but also on places up in Dove Bugt: Baadskæret, Stormbugt, Snenæs and Rypefjeldet. The greatest quantity was found at Syttenkilometernæsset, Renskæret and Rypefjeldet, the specimens being often found hidden away in some part of the bench or under a tent stone.

It has doubtless served, as suggested above (p. 457) for the sides

of oval boxes of which the bottoms were found; it was also used for bows, (cf. p. 403—04), and numerous strips were found which had been split off to the breadth of thongs or as fine thread.

Fig. 57 shows three narrow thongs made of whalebone, tied together in different ways. The one marked *a* (L. 3137) which had been placed under one of the stones round tent 73 at Syttenkilometernæsset, is tied in a single knot; *b* (L. 3695) from the camping ground on the east shore of Stormbugt, is knotted up in a running noose which can be drawn tight by the end shown farthest to the left in the figure; *c* (L. 3721) from the same camping ground, consists of two parts; the one with its end turned upwards forms a noose round the one below.

Whalebone has probably been used in several cases for other implements, but being a perishable material, only few of these have been found in a state of preservation. Two such pieces, both from house 131 on Renskæret, are shown in Fig. 58. Of these, *a* (L. 3442) is knife-shaped, measuring now 13·8 cm. long, but lacking the point; one edge, viz. the back, is straight, the other curved. At the bottom of the back there is a notch, a little farther up on the opposite edge a hole. Specimen *b* (L. 3438) is 18 cm. long, narrow, only 1·2 cm. across, the hinder end frayed and apparently defective, the fore end terminating in a point with two barbs.



Fig. 58. $\frac{1}{2}$.

At the same settlement, a piece of whalebone (L. 3604) 50 cm. long, up to 2·8 cm. broad, was found with two holes drilled close together 7 cm. from one end, so as to form an oblong slit. It would seem as if the Eskimos at Renskæret had cherished a particular affection for whalebone as a material; it is here that three out of the four bow pieces were found, as described in the foregoing; the fourth was from Maroussia.

Concluding Remarks.

The culture of North-east Greenland, as it appears from the finds made up to date, is mainly of the stone age type, the use of metal being extremely rare.

The Eskimos whom Clavering encountered in 1823 on the island which now bears his name (Lat. about $74\frac{1}{2}^{\circ}$ N.) had the heads of some of their weapons edged with iron, which he believed to be of meteoric origin.¹ At Little Pendulum Island, in the same latitude, the Germania Expedition came across a knife with an iron blade, the iron here being stated as "imported".² From $73^{\circ} 7'$, again, i. e. Kjerulfs Fjord, which opens out near the base of Franz Josephs Fjord, two pieces of iron were brought back by NATHORST.³ The next finds of iron-edged implements occur more than $2\frac{1}{2}$ degrees farther south, viz.; two knives at Cape Stewart ($70^{\circ} 27'$)⁴ and three items: a harpoon head, a drill and a knife, from Cape Tobin ($70^{\circ} 24'$).⁵

These few finds comprise, as far as I am aware, all the iron hitherto met with north of 68° , which degree of latitude roughly marks the boundary between the Scoresby Sound district and that of Angmagsalik. In the collection from the Danmark Expedition, not a single piece of iron is found; as unique pieces of evidence of its occurrence, however, should be mentioned the drill shaft from Renskæret ($76^{\circ} 41'$)⁶ and the two small axe-heads from the east shore of Stormbugt.⁷ At the same time it should be noted, that these items stand alone among over 100 specimens of cutting, piercing or boring implements: harpoon and arrowheads, points of other weapons, men's and women's knives, drills etc., found by the Danmark Expedition, while the whole material from North-east Greenland collected from various sources now amounts to probably somewhere

¹ PETERMANN'S Mitteilungen 1870, p. 326. ² KOLDEWEY, p. 605, Fig. 20, cf. p. 623.

³ NATHORST, p. 257 and p. 347, Fig. b. ⁴ RYDER I, p. 322, Fig. 21 a; NATHORST p. 347, Fig. a. ⁵ THALBITZER I, p. 347, Fig. 2, 453, Fig. 47 d and 455, Fig. 48.

⁶ Fig. 31, p. 439. ⁷ Pl. XVIII. 9—10, cf. p. 437.

near two thousand items. It will thus be seen, that iron must have been extremely scarce.

The Norwegian ethnographer, Dr. O. SOLBERG, in his pioneer work "*Beiträge zur Vorgeschichte der Osteskimo*", distinguishes between the true Eskimo stone age, represented, as far as Greenland is concerned, markedly and typically on the northern portion of the West Coast — and a later stone age during which metal is known, but not actually available, wherefore the form of the iron cutting edge is imitated in stone. Knives and weapon points of slate are there predominant; to this period also belongs the slate-bladed Ulo.

To the later stone age belongs, according to SOLBERG, the stone age of North-east Greenland, and to this it must still be ascribed, albeit the Danmark Expedition has brought to light certain implements, the non-existence of which is cited by SOLBERG in support of his theory as to the slight antiquity of this stone age.¹ Thus several stone bits for drills have been found (p. 439—40) a large strong scraper (Fig. 34) a flint core, from which flakes are taken off, of the same diminutive size as commonly encountered in the finds from West Greenland (Pl. VII, 12) as also some more or less shaped chippings of flint. The scraper is in this connection of minor importance, as this implement is retained in stone far on into the iron age;² more significance attaches to the other items mentioned, especially the flint core, which cannot be overlooked as an indication that the same small flakes were here shaped and used as in the stone age of West Greenland.

The Danmark Expedition has enriched the stone age material from North-east Greenland by the finding of several new forms of implements, and it is not impossible that subsequent expeditions may serve to throw further light upon the earliest occupation of this coast. THOSTRUP is doubtless justified in noting as a point of some importance the fact that the oldest ruins are so faintly discernible on the ground, and may thus easily be overlooked, or passed by as unpromising;³ it should also, in my opinion, be borne in mind that the investigation of North-east Greenland has been carried out by expeditions working under difficult conditions, with little time to spend on detail, having many aims of various nature to consider, and frequently without previous experience in archæological work. It is thus not surprising that the small, inconspicuous flint objects are not found. In the case of the West Coast, on the other hand, the large quantity of stone age material from here, especially from Disco Bay, was obtained from time to time during the course of almost a century, largely through the agency of Danish residents,

¹ SOLBERG, p. 60.

² Cf. MASON III, p. 581.

³ THOSTRUP, p. 338.

whose attention had been directed by scientists to the value of the small and apparently worthless objects concerned.

All this, however, gives us but a hint in the direction indicated; the actual finds as hitherto made do not yet warrant our asserting the existence of an earlier period, and the bulk of the items are distinctly suggestive of the later stone age. To this category should be reckoned harpoon heads with attached points of slate or bone; the employment of this latter material especially, for the cutting edge of a bone head, where it serves no useful purpose, is most eloquent in itself. Even clearer testimony to the earlier knowledge of iron is afforded by the slate knife fashioned to the model of an European table knife (p. 433). The other form of knife, again, with a groove for the insertion of a cutting edge, does not point very far back. As I have endeavoured to show in the foregoing (p. 431—32) this type has, in my opinion, superseded in West Greenland the shark's tooth knife, which was still in use about the middle of the 17th century, but seems to have dropped out at its close. Thus the finds hitherto made are not in themselves opposed to SOLBERG's theory, according to which the human occupation of North-east Greenland should not be dated from earlier than about the 16th or the first half of the 17th century.¹ And the finds are, of course, the only facts we have to go upon in assigning a date; the history of North-east Greenland in relation to the Europeans begins and ends with the year 1823.

As regards the neighbouring people to the south, the Eskimos of Angmagsalik, the historical data are more plentiful, albeit even here scanty enough. The name itself, Angmagsalik, is first met with in 1849;² we have, however, two accounts from the middle of the 18th century which seem to indicate that the region was then inhabited.³ With such a paucity of material, every link which can be added is of value, and it appears to me therefore worth while to cite the following note, as suggesting the occupation by Eskimos of the East Coast north of 65° in the first quarter of the 18th century.

In the annual list of acquisitions for 1726 to the Royal Museum „Det kongelige Kunstkammer”⁴ we find, under Greenland, mention of the following:

„Eine Grünlandische Ruder-Rieme, womit man auff beyden Seiten Rudeln kann.

Eine Lantze oder Wurf-Spiess, woran der in der mitte, nach Grünlandischen Gebrauch sitzende Hakens oder Angels verloren.

¹ SOLBERG, p. 62. ² Here spelt Angmarselik, cf. *Medd. om Grøn.* Vol. I.III, p. 393 et seq. ³ Cf. THALBITZER II, p. 334 et seq. ⁴ In the State Archives (Rigsarkivet). The original spelling of the MS is here retained.

Eine Maschine von zwei Kreudtzweis übereinander gehende Hölzter etwas krum gebogen: welches die Grünländer auff ihre kleine Böße im Fischen vor sich setzen; darauff ihre Lantzen undt Harpunen legen; Und auff die daran sitzende spitzige Knochen oder Zähne die Gefangene Fische und Vögel hangen.

Diese Drey Stücke sint, wie der Voigt auff Islandt CORNELIUS WULF berichtet hat: von der See auff getrieben, in Guldbringe Sysel, und Western in Iissefiords Sysssel gefunden worden".

Unfortunately, in the next general catalogue of the museum (1737), the Greenland section is so briefly dealt with, that it is impossible to see whether these three objects are still preserved among the old Greenland items in the National Museum. It is therefore fortunate that the description in the earlier list is of so detailed a nature as to leave no doubt regarding the objects themselves. The two first are a kayak paddle and a bird dart respectively; the third is a "kayak stool" a receptacle for holding the harpoon line, the stool being of the cross-shaped type, which has remained in use at Angmagsalik down to our times.¹ For the statement as to its being employed to hang fish on, the authority quoted must be held responsible; he is however, correct as regards its place in the kayak, and the fact that the harpoon is placed upon it.

Now the two first-named implements are of widespread occurrence; the third, however, is typical for Greenland, albeit not restricted to the eastern part, as this form was, in earlier times, also employed on the West Coast.² The form of the objects, then, gives us no nearer determination of locality than Greenland, but the area of possible origin becomes more restricted when we begin to consider from what parts of Greenland they could have been carried by the current to the west coast of Iceland; Isafjordssysssel and Guldbringasyssel form respectively the north-west and south-west corners of the island.

The Arctic Current flows, as we know, in a southerly direction down along the coast of North-east Greenland. One branch follows the coast farther on through Danmark Strait and curves round the southern point of the land up northward along the west coast. Another bends eastwards along the north and east coasts of Iceland, where it meets the so-called Irminger Current, which, owing to its higher temperature, here becomes the surface current. The Irminger Current then follows the south coast of Iceland to the westward, and curves up along the west coast of the island.

¹ Cf. THALBITZER II, p. 388, Fig. 92 b.

² E. g. a specimen preserved in the National Museum, found in a grave at Kardluk in Waigattet, about 70° N. lat. (L. b. 294).

Captain C. RYDER, of the Danish Navy, now head of the Danish Meteorological Institute, has carried out a series of investigations in connection with the currents in northern waters by means of bottle post.¹ Thus in the course of his expedition to East Greenland 1891–92, a bottle was set out at Heklahavn in Scoresby Sound; after a lapse of 20 months it was found among the islands outside the harbour of Reykjavik. The chart in RYDER's paper² shows its supposed route as running close in towards Cape Nord, in Isafjordssyssel, whence it should then have proceeded along the north, east and south coasts of Iceland, finally bringing up at Reykjavik, in Guldbringasyssel. From this it is evident, that Scoresby Sound must be reckoned as among the places whence the objects above mentioned might have come.³

Thinking now, that it should be possible to fix a southern limit for such possible starting places, I consulted Captain Ryder on the subject; he informed me, that if the objects had drifted from the east coast of Greenland directly to Iceland, then the southern part of the coast would be out of the question; they could hardly have come from anywhere south of 65°.

Theoretically, there still remained the possibility that the objects might have started from the southern east coast or from the west coast of Greenland, and followed the other branch of the Arctic Current northward and west over to Labrador, and thence south and east, finally approaching the coast of Iceland from the southward. Practically speaking, however, this alternative may doubtless be disregarded. The bottle from Scoresby Sound took 20 months to reach Reykjavik; objects travelling by the other route would be several years on the way, and even if they escaped being washed ashore at other places on the lengthy voyage, there is no doubt that in any case a thing of so frail construction as the cross-shaped kayak stool must have been dashed to pieces long before it could have reached so far.

Such argument may not perhaps furnish any decisive proof; nevertheless, the case in question does seem to indicate with a pro-

¹ RYDER III–IV.

² RYDER III, Chart IX, H. 53.

³ Of the remaining material, only a small amount has any bearings on the regions with which we are here concerned; a bottle set out at sea outside Scoresby Sound (loc. cit., H. 5) and another outside Franz Josephs Fjord (H. 38) both drifted eastward round Iceland, but escaped the Irminger current, and continued their course towards the Færøes, where the latter was washed ashore, while the former floated still farther eastward, and turned up along the Coast of Norway, where it was found off Throndhjem. Finally, a bottle set out off Angmagsalik, but 4–5° farther east, came ashore at Berufjord, midway up the east coast of Iceland. (RYDER IV, chart I, A 63.)

bability approaching certainty, that the coast north of 65° must have been inhabited prior to 1725.

In seeking to draw conclusions from the foregoing detailed investigations, as to the culture of North-east Greenland in its relation to that of Greenland generally, we are hampered in the first place, by the slight degree of variability in Eskimo implements with place and time. Then again, the culture of West Greenland cannot be taken as a unit in itself, but should rather be considered — quite apart from European influence — as a mixture of elements from various tribes, which have immigrated in course of time to the country, and have been forced by existing natural conditions, the close proximity of the inland ice to the coast, to follow the same route.

The quantity of material procured from North-east Greenland is now, however, so large that we can no longer put aside the question as to the relation, in point of culture, of these tribes to their neighbours in the west and south.

The Danmark Expedition was able to follow the traces of Eskimo occupation northward as far as about 82° N. Lat., where Independence Fjord runs in south of Peary Land, and some way up this fjord as far as Cape Peter Henrik at the mouth of Hagens Fjord. Later on, the first Thule Expedition encountered, in 1912, Eskimo tent rings still farther up, at Jørgen Brønlunds Fjord,¹ which lies about midway between the West Coast (Nares Land) and the East Coast (Nordostrundingen). The tent rings were situated on the south coast of Peary Land, but on the seaward coast of this peninsula, neither Peary nor the Danmark expedition found any trace of Eskimo occupation. On the West Coast also, the trail is lost at about 82° .² From what we now know, there seems little reason to doubt that the route of the Eskimos migrating from one coast to the other passed south of Peary Land.

To the northward, the nearest neighbours of the North-east Greenland Eskimos are to be found at Smith Sound on the West Coast. Here, however, we meet a marked instance of the very feature before mentioned: new forms of culture superimposing themselves upon the older. As referred to in the foregoing, an immigration took place here in the 60's of the past century, which carried with it the introduction or alteration of characteristic implements; the kayak and its appurtenances, the salmon spear, the bow and arrow as they were found there until superseded by firearms, were

¹ KNUD RASMUSSEN II p. 317 et seqq., cf. Pl. XI.

² NARES, Vol. II, p. 190 (Feilden).

all introduced from the American side about that time. If the question as to whether the Eskimo of North-east Greenland had immigrated by way of Smith Sound were to be decided from the forms of implements which now characterise the culture of the latter region, then the answer would have to be negative. From the tribe's first encounter with Europeans in 1818 to the immigration mentioned, the implements in use were but the rudest necessities; grave finds, however, indicate that this had not always been the case. Both harpoon heads and arrowheads have been found in older forms, closely related to those of the West Coast generally,¹ and it may be expected that material preserved in various collections, but of which no description has yet been published, will confirm this.

The effacement of the earlier culture in this region is the more regrettable, since Smith Sound and the Kennedy and Robeson Channel farther to the north are the only natural immigration routes for the various tribes, and form the crucial point in the question as to the course of Eskimo migrations in Greenland; the Polar Eskimos are the only ones now living at the gate, so to speak, of Greenland itself.

Turning to the southern neighbours of the North-east Greenlanders, the people of Angmagsalik, we do not here encounter the markedly heterogeneous mixture of implement types noted in West Greenland, but a far greater uniformity is on the contrary apparent. A number of implements must be taken as peculiar to this tribe, and a particular style of art has developed, indicating that the inhabitants of this region have been left to themselves, and not continually subjected to the influence of fresh immigrations into the district.

This is, however, not to be understood as meaning that the tribe in question has lived in a state of total isolation. It must be borne in mind that the fact of their now having no neighbours nearer than the southern point of the land is a state of affairs which has developed in the course of the past hundred years, due to the continual movement of the southern East Greenlanders over to the attraction of the Danish trading settlements. GRAAH, on his voyage up in 1829, estimated the population on the East Coast as far as Umivik ($64^{\circ} 18' 50''$) at close on 600, of which half were living south of $63\frac{1}{2}^{\circ}$.² Even before his return, however, 120 had left, and some 80 others were preparing to follow their example in the following year.³ The last East Greenlanders south of the Angmagsalik territory, 38 in

¹ cf. KANE, Vol. I, p. 52 and the present work p. 405.

² GRAAH I, p. 118, II, p. 115.

³ GRAAH I, p. 149, II, p. 144.

number, from Tingmiarmiut ($61\frac{1}{2}^{\circ}$) did not leave the East Coast until 1899.¹ In all probability, the Angmagsalik Eskimos would have done likewise, leaving the coast entirely uninhabited, had not the movement been artificially checked by the establishment of a trading station at Angmagsalik in 1894. Through the agency of these neighbours, who made long journeys down to the southern point of the land, and, encountering there the Greenlanders of the West Coast, brought back with them European products, especially iron, West Greenland and Europe were brought indirectly into contact with the Eskimo of Angmagsalik. Nor were these insensible to the new influence. Thus when HOLM discovered Angmagsalik in 1884, several women's knives of the West Greenland type were already in use there. We may even note a quite remarkable tendency to learn anything new, as evidenced, for instance, by the fact that their umiaks are built on the dovetail principle, whereas in West Greenland lashings are still used; their women, also, have latterly evinced partiality to the European skirt, an awkward article of dress which has not found favour on the West Coast, albeit this region was colonised at a far earlier date. And it is beyond doubt, that the form of head-gear shaped like a sailor's cap² is of European origin.

There is thus evidence enough of external influence: from the south, and the more southerly West Coast districts.³ Even the peculiar style of ornamentation, consisting of bone laid on to wood, is found in West Greenland; it has, however, in Angmagsalik, developed to a remarkable degree and with a local stamp of its own, just as the European cap has there been transformed to a graceful fashion of headdress suited to the conditions of the place.

The clear and distinctive traits apparent in the culture of Angmagsalik are thus not due to isolation or insensibility to external influence, but should, in my opinion, rather be ascribed to the fact that we have here a receptive population living in a region just sufficiently sequestered from the outside world to permit of their absorbing what may be brought within their reach, adapting it to their particular needs, and giving it a stamp of their own.

If now we proceed to consider the implements from North-east Greenland in comparison with those from Angmagsalik, it must be admitted that the points of resemblance are, as soon as we pass beyond what is common to Greenland generally, or to the Eskimo

¹ MELDORF, p. 23, cf. p. 21. The few items preserved in the National Museum from these last inhabitants of South-east Greenland agree with those of the Eskimos from Angmagsalik.

² THALBITZER II, p. 589 and 591. Fig. 314—315.

³ BIRKET-SMITH I, p. 20 et seqq.

as a whole, remarkably few and slight. Thus, as mentioned above, (pp. 415—17) a so important article as the sledge in North-east Greenland differs very considerably in dimensions from the little narrow sledge of Angmagsalik, while on the other hand, it closely resembles the West Greenland type. Harpoon heads, also, resemble more certain West Greenland forms than the characteristic fashion of Angmagsalik. The needlecase, again, which in North-east Greenland is found in its oldfashioned form (pp. 365—66) is of comparatively frequent occurrence in West Greenland north of the Arctic Circle, while, as far as I know, only one specimen of this type has ever been found in South Greenland, and in Angmagsalik it is replaced by the needle skin. Something similar may be noted with regard to the men's knives of bone, grooved for insertion of a cutting edge (p. 429 et seqq.); of these also, numerous specimens are known from the northern part of the West Coast, there is a single one from South Greenland, and on the southern part of the East Coast, including Angmagsalik, it is altogether lacking.

It would certainly seem that some little importance should be attached to these features, albeit it may be admitted, that Angmagsalik and the southern part of the East Coast are, from the archaeological point of view, somewhat of a *terra incognita*, where future finds may lead us to alter our views in some degree.

There are, nevertheless, also points of contact between North-east Greenland and Angmagsalik. Among the series of harpoon heads from North-east Greenland, one (RYDER I, p. 314, Fig. 13 b) which was found as far south as Scoresby Sound, differs from the rest. It is furnished with one lateral barb in front, a peculiarity doubtless borrowed from the south, as it is not found in any of the many specimens from farther north.

Another link with the south is afforded by some of the loose shafts belonging to the larger hunting weapons. It has been shown above that the typical feature of this part of the weapon in North-east Greenland is its conical posterior termination, as found in earlier specimens from West Greenland. In the region about Scoresby Sound, however, we have in this case also to note a certain reservation: incipient transition to the newer type of connection between shaft and foreshaft, as found in Angmagsalik, the foreshaft being cut off flat, save only for a slight projection in the centre, answering to a hole in the flat surface of the shaft mounting (cf. pp. 390—91).

These two features are of interest as indicating the existence of some contact between the North-east Greenlanders and those of Angmagsalik in the region about Scoresby Sound. That such indications — among which should doubtless also be reckoned the sporadic

occurrence of iron in the southern regions of North-east Greenland — appear, is not surprising, in view of what we know regarding the movements of the Angmagsalik Eskimo to the northward. Thus a man named Kunak, who was still living in 1906, informed HOLM that he had, as a boy — probably about the year 1850 — lived for three years at Nordre Aputitek ($67^{\circ} 47' 5''$), and had been there again about 1886.¹ AMDRUP found at this place a house, which he identified as that where Kunak had lived as a child; he gives the following description: "The ruined house itself lay on a site on which two other houses had previously stood, so that the island must have been successively occupied by different sets of inhabitants". "Its size precluded the possibility of its having been inhabited after Kunak by Eskimo from the North".²

HOLM further writes: "A man who is still alive told me that his father once drove in a sledge from northern Aputitek to the district round Kangerdlugsuak. Here he found a house which had just been deserted by its inmates, who had driven away in sledges. It could be seen from the sledge tracks that they had gone northwards. They lay down to sleep in the house, but as he was stabbed in the leg with a knife while he was asleep, he returned as fast as he could to Aputitek, without seeing anything of the inhabitants. Nothing has ever been heard since of the people up in the north".³ Elsewhere, the following note is made: "According to the statement made by another, the place visited by this man was as a matter of fact, the country north of Kangerdlugsuak, and he reported, that the coast here curved round in a northerly direction".⁴

These accounts suggest that the routes of the two tribes have crossed from time to time; there is, however, no record of friendly intercourse between one tribe and the other. Another, more direct indication as to the routes followed is furnished by the houses still preserved. Unequal as they are in size, and varying considerably in shape, their true significance is not always very clear; nevertheless, certain features can be laid down with certainty as regards the winter houses of indubitably North-east Greenland origin. On referring to the plate showing the measured specimens of the houses, about 60 in number, found by the Danmark Expedition⁵, it will be seen that with one exception (that of the double house 132—133 at Rensskæret) the greatest extent is not, as in Angmagsalik, transversely to the direction of the passage-way, but — save where length and breadth are equal — in the direction from passage-way to rear wall. RYDER notes the same with regard to the fifty or so houses

¹ HOLM III, p. 218, AMDRUP I, p. 246 et seqq., II, p. 311, THALBITZER II, p. 345.

² AMDRUP II, p. 311. ³ HOLM II, p. 110. ⁴ HOLM III, p. 222. ⁵ THOSTRUP, Pl. II.

he found at Scoresby Sound,¹ and a like feature is observable in the illustrations given by KOLDEWEY and NATHORST of the houses they encountered in the interjacent regions.² Peculiar to this type is the deeper-cut passage-way, and niches in the lateral walls are also frequent. The size varied, in those seen by the Danmark Expedition, from 1.80×1.80 to 3.25×3.00 or 3.50×2.80 ; in the case of RYDER's from 1.60×2.50 to 2.70×3.80 metres.

The same type of house was found by AMDRUP in the settlements he investigated at Scoresby Sound and south of there as far as the Kangerdlugsuak glacier: at Cape Tobin and the Skærgaards Halvø.³ South of this glacier, we enter the territory known to have been traversed by the Angmagsalik Eskimo, and where we might in consequence expect to encounter the larger houses with passage-way running out from one of the longer sides. Such were also found, from Nordre Aputitek southward, but in addition to these, the smaller houses, with greatest extent in direction of the passage-way, were likewise encountered as far down as Depot Island, south of Kangerdlugsuatsiak Fjord. AMDRUP notes, with regard to this point, that it to some extent confirms RYDER's hypothesis, viz; that the Eskimo of North-east Greenland gradually moved southward via Angmagsalik to the southern East Coast: "It is necessary, however" he adds, "to be very cautious in drawing conclusions from the size of the houses as to the peregrinations of the Eskimos; for the size of the houses is no doubt determined by local circumstances, and not by any peculiarity of the different tribes".⁴

That the question is a difficult one to determine is certain, and there are good grounds for recommending caution, the more so, as these houses have not been subjected to excavation. Nevertheless, for my own part I consider the occurrence of the small, deep houses here of some importance as indicating that families from North-east Greenland must have penetrated down to somewhere near Angmagsalik; I cannot but regard it as significant, that both types of house are met with at one and the same spot, i. e. under identical local conditions, as for instance between Cape Warming and Langø, at Nordfjord, between Kangerdlugsuatsiak and Nordfjord, and on Storø.⁵ At the last-named place we encounter the peculiar circumstance of two large houses having been reduced in size by building new side walls. If my theory holds good, then what must have happened here would be this: Eskimos coming down from the North had taken up their quarters in a house previously built by a party from Angmagsalik, in the same manner as the man from there just mentioned

¹ RYDER I, p. 296. ² KOLDEWEY, p. 589; STOLPE, Pl. III. ³ AMDRUP II, p. 315 and 312. ⁴ AMDRUP II, p. 320. ⁵ AMDRUP II, p. 303, 301, 300 and 299.

found a lodging north of Nordre Aputitek in a house there belonging to Eskimos from the North.

Whatever degree of importance be attached to the construction of the houses, it is at any rate certain that the Angmagsalik Eskimo in the country round Kangerdlugsuak were aware of the existence of some people unknown to them, and that the North-east Greenland types of implements in the region of Scoresby Sound exhibit features hardly to be otherwise explained than as due to southern influence, the point of contact being probably near the glacier of Kangerdlugsuak, and the communication taking place between certain adventurous spirits on either side, whose wanderings led them beyond the natural territorial limits of their tribe.

THOSTRUP, in his description of the settlements found by the Danmark Expedition,¹ takes the state of preservation of the houses as the basis for an hypothesis according to which the immigration into North-east Greenland should have taken place in three sections, with a considerable interval of time between the two first. All can be traced in the Cape Bismarck district; outside this, however, the oldest ruins are only found in the north, and the two younger only in the south.

The state of preservation alone seems to me a somewhat slight foundation on which to base conclusions; the construction observable in the ruins does not show the difference between the three groups, and I have therefore, in the course of the work, endeavoured to find some such features as might serve to support the theory. That I have not succeeded in doing so does not disprove it, for as a matter of fact, none of the oldest ruins in the Cape Bismarck district have been subjected to detailed investigation; the find from Eskimonæssæt is the only one giving a fuller representation of the earliest group. As regards the two later ones, which lie nearer to each other in point of time, it is hardly to be expected that any difference should be discernible in the workmanship, when both were due to the same tribe.

In answer to my doubts upon this point, expressed by word of mouth, Hr. THOSTRUP firmly maintained his view. That there should be a difference of date between the northern and the southern ruins is in itself natural enough, if the migrations from the north took place without any break of great duration until we reach Germania Land, where the settlements are numerous along the sea coast and in Dove Bay. It is but natural that the Eskimo should have remained here for a time, before going farther southwards.

¹ THOSTRUP. p. 335 et seqq.

When, however, the writer extends his theory and claims that the latest ruins should be due to immigration from the south, the finds themselves, in my opinion, contradict him. The transition in the types of implements now apparent in Scoresby Sound should in such case be met with in Germania Land. The fact, as mentioned by him, that graves are not found north of 77°, is rather due to conditions of climate than to difference of culture; during a very large part of the year, the material necessary for their construction is hidden by snow. One of the principal arguments in favour of the theory of later immigration from the south is the fact that hunting from boats is seen to be carried on at places where the sea may be traversed by sledge throughout three-quarters of the year. It may be admitted, that a people coming from the North, and never having hunted in kayaks, would hardly hit upon this method at a place where such conditions prevailed; it would be a different matter in the case of a tribe accustomed in their original home to the use of the kayak, and penetrating down to the Cape Bismarck district, not in the course of generations, but without longer halts than were imposed by natural circumstances, to find there conditions sufficiently favourable for them to settle down.

A further important argument in favour of Hr. THOSTRUP's theory is the hunting available; among the earlier inhabitants, the musk ox was the principal game to be found on land, while with the younger, the first place was taken by the reindeer. The former should thus have followed the musk ox southward, the latter moving northward on the track of the reindeer up to the limit of its occurrence. This hypothesis, attractive enough in itself, is nevertheless hardly conclusive when not supported by the remaining facts as known. Albeit instances are known of Eskimos in reindeer country having refrained from hunting the animal in question,¹ it is hardly surprising that they should, when suddenly encountering this game, prefer it to the difficult hunting which had previously been their only resource in this field, more especially if they were acquainted with reindeer from their original home.

Judging from the implements, it seems to me beyond doubt that the Eskimo of North-east Greenland must have come from the North. Their traces then indicate the route as south of Peary Land and out

¹ cf. STEENSBY III, p. 302. This writer gives, by the way, a plausible explanation of the fact that Polar Eskimos had not previously hunted reindeer; this would, he points out, be due to their having been engaged during summer in the pursuit of feathered game, which would keep them away from the reindeer country.

along Independence Fjord to the East Coast. And we may with a considerable degree of certainty mark down the region on the American side whence they originally came.

Prof. FRANZ BOAS has, in his work "The Eskimo of Baffin Land and Hudson Bay" collected a mass of material which for the first time renders it possible to make closer comparison. Immediately after the publication of the Amdrup Collection records moreover, he proceeded, in a review in the American weekly, "Science",¹ to draw the conclusions to which these pointed. He writes, in this connection: "It brings out conclusively the close relationship between the culture of the northeast coast of Greenland and that of Ellesmere Land, northern Baffin Land and the northwestern parts of Hudson Bay. The similarities are so far-reaching that I do not hesitate to express the opinion that the line of migration and cultural connection between northeast Greenland and the more southwesterly regions must have followed the shores of Ellesmere Land, the northern coast of Greenland, and then southward along the east coast". Reference is made to a number of implements, especially needle-cases, snow knives, the ornamentation on the comb from Dunholm and the hunting stools from Cape Tobin.²

The extensive material from the northern regions brought back by the Danmark Expedition entirely bears out the theory of the famous American ethnographer. The country about Southampton Island, especially, affords some very close parallels. In addition to snow knives and needlecases, we here find ornamental plates of bone with a dotted pattern, exactly corresponding to that on the bone plates Pl. XI, 1, and Pl. XXV, 19 (p. 375); there are barbs for side prongs of the salmon spear as in Fig. 17 (p. 398), two-handed scrapers of bone like Pl. XXVI, 5 and those found by RYDER and AMDRUP (p. 445), and a harpoon head of the same form as that in Fig. 8 should also probably be noted here. And in contrast to what is generally the case among the Central Eskimos, arrowheads with conical base have been found; one specimen corresponds entirely to some from North-east Greenland;³ the wooden bow also resembles the North-east Greenland type, though it is heavier; the manner of joining the parts, when not made in one piece, is the same in both places.

With regard to snow knives and needlecases, we find in the regions between Southampton Island and Greenland connecting links

¹ Issue of 15. Oct. 1909. (BOAS IV).

² In Danish, W. THALBITZER has since described the resemblances with the same implements (THALBITZER IV).

³ BOAS III, p. 37, Fig. 193 b; cf. RYDER I, p. 309, Fig. 9.

in forms from Ponds Bay; small figures of bone like these found at Snenæs and Rypefjeldet were brought home by SVERDRUP from Stenkulsfjorden in Kong Oscars Land, and hunting stools like those from Cape Tobin have been found in Heibergs Land and Grinnell Land.

GUNNAR ISACHSEN, cartographer to the Sverdrup Expedition of 1898—1902, has,¹ on the basis of the important discoveries made by that expedition, charted the supposed route followed by the Eskimo on their wanderings through the newly found country up towards Greenland. Since then, however, these theories have been opposed by HERMANN G. SIMMONS,² the botanist of the expedition, *inter alia* on the grounds that our knowledge, especially as to the western parts of the newly discovered region, is still inadequate. In face of this warning from a man able to speak from personal experience, it would doubtless be unwise to take up the question for discussion in these pages, the more so since the data on which my work must be based, viz; the implements found, are only extremely few in number. I will therefore merely point out that the shape of the houses is the same as in North-east Greenland.³

I must also refrain from dwelling on the various hypotheses which have been advanced by several distinguished investigators and scientists with regard to the migration routes of the Eskimos in Greenland itself; the theories in question may be taken as generally known, and lie outside the scope of the present work. I have here been concerned solely with the finds, and it is on these alone that my conclusions have been based. It is to be hoped that further expeditions will in the near future augment the material from the regions west of Greenland, and thus furnish opportunity for continuing the work already commenced on the basis of the rich material brought to light by the Danmark Expedition.

¹ PETERMANN'S Mitteilungen Vol. 49, p. 150—51.

² YMER, Vol. 25, p. 173 ff.

³ cf. SIMMONS, loc. cit., p. 190—91.

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